GAS JOURNAL

LIGHT • HEAT • POWER • BYE-PRODUCTS

[Founded in 1849 as the "Journal of Gas Lighting."]

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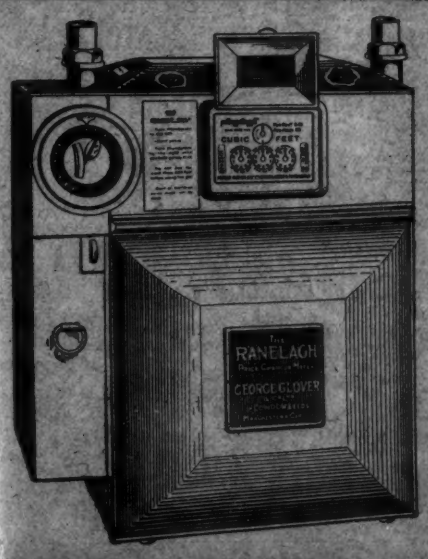

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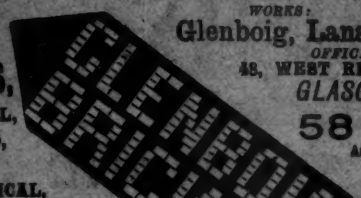

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VOL. CLXIII., No. 3140.] WEDNESDAY, JULY 18, 1923. [75TH YEAR.

EDITORIAL NOTES.

Recognition of the Work of Prof. Smithells.

WE have already referred to the resignation by Prof. Arthur Smithells, C.M.G., F.R.S., of the Chair of Chemistry in the University of Leeds, and to the desire of his friends to commemorate the work accomplished by him during his association with the University for the past thirty-eight years. As is already well known, Prof. Smithells declines to accept any personal token of appreciation; it suffices for him that he retires from active work with the good wishes of such a multitude of friends. Therefore it is proposed (and this is consonant with his views) that a fund shall be raised, and be applied as follows: (1) The establishment of a fellowship or scholarship within the Leeds University; and (2) the commission of a portrait of Prof. Smithells for presentation to the University. The Central Executive Board of the National Gas Council are confident that many gas administrations will welcome an opportunity for subscribing to the fund, in view of the services that our distinguished friend has rendered in promoting the welfare and advancement of the gas industry. As the Board say, in a letter on the subject which they have instructed the Secretary (Mr. W. J. Smith) to address to the members of the Council: "Apart from the fact that Prof. "Smithells has been responsible for the training of a very "large number of students in the application of science to "gas engineering, he has always shown his readiness to "assist the industry in many of the difficult problems with "which it has, from time to time, been faced." We are sure that the Central Executive Board have properly sensed the views of the gas industry, in desiring that it should take part in this recognition of invaluable services during a period which has been so considerably one of transition in the gas industry. Prof. Smithells, in many matters in which his special qualifications fitted him for the rôle, has been during those years the guide, philosopher, and friend of the industry. We hope the response to the suggestion will be made promptly; and that subscriptions of any amount will flow to the National Gas Council from both gas undertakings and individuals. These will be forwarded, in the names of the respective donors, to the Treasurer of the fund in Leeds. There will be no publication of the amounts of individual subscriptions; but a statement as to the sum raised and the manner in which it is allocated will be sent to subscribers to the fund. It is, however, proposed that Prof. Smithells shall receive a full list of the names of the subscribers.

A Retrograde Step.

BEFORE the passing of the Gas Regulation Act, the Gas and Water Works Facilities Act was in operation. Under it gas undertakings could secure Provisional Orders conferring powers which otherwise could only have been obtained by Act of Parliament. The General Act was a recognition of the facts that, for small undertakings, and for certain purposes, procedure by way of a Bill was cumbrous, and frequently the expense reached outrageous figures which were a burden to the gas undertakings concerned—particularly the smaller ones. That was the idea, or at any rate one of the fundamental ideas, which originated the system of Provisional Orders; but the idea did not always work-out in practice. A Provisional Order had to undergo all that was then involved in making application through the Board of Trade. If it had stopped there, no one could have seriously complained. But it did not. If a local authority was inclined to be pugnacious, or had any other inspiring motive—and time has brought before us many motives—they could continue to pursue the promoters on the Provisional Order being presented by the Board of Trade to Parliament for confirmation. This would result in Committee proceedings—just the same as in the case of a Bill. In this way, it was possible for the cost of a Provisional Order to mount up to—sometimes it exceeded—that of promoting a Private Bill in Parliament.

When the Gas Regulation Act was passed, incorporating section 10 and the system of Special Orders, it was thought that a simplified and less expensive plan had been instituted. But what was hoped, was not to be. Last summer the Lord Chairman gave formal notice of certain amendments in Standing Orders, including the insertion of a new one, which was tantamount to an invitation for opposition, after a Special or Draft Order under the Gas Regulation Act, 1920, or the Electricity Supply Act, 1919, has been laid before the House by a Government Department. In the event of opposition, it will be remembered, there was to be reference to a Joint Committee of the two Houses, or to a Select Committee of five members. So what it was anticipated would result in simplified procedure, and ease the way for all gas undertakings securing additional or new powers, has been pushed back into practically the same old complicated and costly system as before. There is perennial talk of the reform of parliamentary procedure; there has been inquiry for the express purpose of simplifying the course, and lightening the expense, of Private Bill legislation. But when something really beneficial is done, there seem to be set in motion influences which prove successful in bringing about a reflex action. That is what has happened in this case. We see an illustration in the lengthy proceedings on the Barnsley Special Order, as reported in our "Parliamentary Intelligence" to-day. In the minutes of the Central Executive Board of the National Gas Council, there is reference to the matter; and it has been decided that it shall be taken up by the Council.

This complication of procedure and increase in the costs of obtaining new or additional parliamentary powers is entirely against two of the main purposes of the Gas Regulation Act. They are co-ordination and expansion of public service. The Act seeks to bring about uniformity in the basis of charge and in testing conditions throughout the statutory gas supply industry; and section 10 has for one object the securing of powers for bringing about more economical supply in at present less favoured areas of the country. It also enables non-statutory companies to obtain powers, and to bring themselves into a condition in which they can come within the co-ordinating influences of the Act. But the invitation of the Act to such undertakings is largely abrogated by the invitation to others to prosecute opposition beyond the Board of Trade into Parliament; and we are confident that the restoration of the exposure to the complications and costliness of the old procedure will deter many undertakings from making application for new powers. It is a pity. The Central Executive Board of the National Gas Council regard it as a "retrograde step." They are right; and we hope that they will be successful in convincing the parliamentary authorities that it is so.

Nomenclature and Service.

In some respects in the gas industry, we are somewhat old-fashioned; and we have a traditional habit of adhering to certain things long after they, through new circumstances, should have been discarded. This particularly applies to our nomenclature. As conditions alter and the position is transformed, more suitable appellations should be found. Take, as an example, the secondary products of the carbonization of coal primarily for gas production. In the accounts of gas undertakings, and in writings and speeches, almost everywhere we have these important commodities—commodities which are basic materials to other industries—spoken of as "residuals." We do not like the term. To our mind, anything that is a residual is a thing of but little importance. Yet the secondary products of gas manufacture, far from being of low importance, are of considerable value to the producers, to the consumers of gas, and to other industries. In the coking industry, metallurgical coke is the primary product; but the coke-oven owners do not call the gas, tar, ammonia, benzole, and so forth "residuals." In that industry, they are "bye-products"—which is a good expression, but used less in the gas industry than "residuals." At the beginning of the industry, these things were more or less "residuals"—something obtained after the primary product, and which had then a fairly low value, as the men of the times had not fully appreciated how to make the best use of them. But the times have changed; so have knowledge and values in these directions. And the commercial position of gas has a very great dependence upon these secondary products, which so many men depreciate by still calling them "residuals." Again, it is only just recently that gas-meters have escaped from having their sizes represented by so many "lights," despite the fact that for forty years past the business of the gas industry has been developing considerably in cooking, heating, hot water provision, industrial uses, and so on—a large proportion of the gas passing through the "so-many light" meters having nothing whatever to do with lighting. Moreover, the "lights" represented by the descriptive capacity term have little existence to-day. The gas that served for one light in the days when the term was first applied to meters, would be ample for four or five times the illuminating power by the incandescent burners of to-day.

Perhaps a worse idiosyncrasy in respect of nomenclature is found in placing in the category of "distribution" all that large business done on the other side of domestic and industrial gas-meters. It is time that in accounts and in operations the work and business done among the gas consumers is given a department altogether separate from "distribution," and with a distinctive name conferred upon it. The great business now carried on in the sale and hire of fittings and gas apparatus has nothing whatever to do with distribution—distribution is really only the connecting department between manufacture and utilization. When we talk and think of all this big business and work—sale, hire, and gas consumption development—among the consumers as being "distribution," we do not find much incentive or inspiring force in the term. We should like to see everything on the consumer's side of the meter detached entirely in our operations and thoughts from distribution. The Plymouth and Stonehouse Gas Company have made a move in this direction, though we do not understand that they have made a distinct division between distribution and service. Anyway, they have come to the conclusion that the work that is done among the consumers deserves more recognition and a more suitable appellation than it has had hitherto; and so henceforth all this work will come under what is now known as the Service Department—the work connected with which will be almost equally divided between the central depot at the works and the showrooms. The former is a stores for everything required in the sales and hiring work; testing is also carried on there; appliances are overhauled and repaired; and conversions of old appliances to a more efficient state are made. At the showrooms there are samples of every type of appliance, with a staff of capable assistants. Complaints are received there from consumers; and these are at once transmitted by the Company's private wire to the distribution department. The private fittings branch, too, has been reorganized, so that consumers' orders may receive skilled attention without any delay. An efficient and well-trained staff are at the service of the consumers to give advice free of charge. More details will be found in an article in our "Miscellaneous News."

We suggest that all gas undertakings should rename the branch of their work dealing with the requirements of the consumers and the development of gas sales. The "Service Department" goes straight home. It indicates more to the consumers than the "Distribution Department." The title alone gives something to talk about; and it will look well in the local advertisements. "The Gas Service Department, and What it Does," would be a good subject for advertising literature. The influence, too, of the title upon the staffs of gas undertakings, we feel convinced, would be great. While the consumers would constantly have before them the fact that the gas undertaking was willing to render them service, the staff of the department would always have before them the fact that their duty in life is to render service to the company's customers. There is a great deal in the influence of a name. A name can be highly significant, can convey much, and can even inspire. Then let all gas undertakings separate as far as possible distribution from service, and talk of service rather than of distribution. "Distribution," important as it is in the system of a gas undertaking, has no meaning for the consumers; "service" has. They do not care in the slightest degree how the gas reaches them, so long as they get what they want. But "The Service Department"—that will tell. It is one of the little things that is big with importance and result.

A Question of Gas-Trading Policy.

Whether gas-meters and gas-consuming appliances should be supplied free or a rent be imposed for them sufficient to cover all capital charges, repairs, maintenance, &c., is purely a question of policy. We have our own views as to which, in the majority of cases, is the correct policy. The point which has been raised, and which calls for notice, does not invite discussion of the question as to the correct principle to adopt and apply in this matter, but as to whether the supplying of appliances free or at rents inadequate to cover the capital and other charges is illegal. As a matter of fact, regarded simply as a principle in policy, it cannot, through local differences, be definitely said that one line of conduct would be the better to apply in all circumstances. Gas undertakings, in order to render the best service at the lowest possible price, should each be free to utilize the lines of business development in respect of gas appliances which, in the end, will best serve the undertaking and the whole body of consumers, who are also ratepayers.

The matter has been raised and argued in the Edinburgh Sheriff Court, before Sheriff Orr, K.C., by certain traders who alleged that what the Corporation Gas Department are doing in respect of lending gas-consuming appliances free or at rents inadequate to cover all the charges appertaining to them is *ultra vires*, and they also questioned whether the showrooms were being carried-on profitably. Sheriff Orr, as reported in our "Legal Intelligence" last Wednesday, was against them on all points. At the moment, there is no information to hand as to whether or not there will be an appeal against the decision. We may, however, be allowed to express the view that the judgment is sound on every point. When a municipal authority is given statutory powers to carry-on an undertaking such as gas supply, it is intended that it shall be done in a manner which will render the best and most economical service to the community. The traders, both as traders and as ratepayers, regard themselves as having a grievance; but it must not be overlooked that, if they had won this case, a larger and more influential body of ratepayers who are consumers of gas would have had a still stronger grievance against the traders through having upset a system which has well served both them and the undertaking which supplies them with gas. The traders seem to have made a sort of rough hypothetical estimate as to the costs incidental to the lending-out of gas appliances; and they found that the item of rental actually received for the appliances falls far short of the necessary sum. If, in the circumstances of Edinburgh, an undertaking is paying its way, this fact alone shows very clearly that all capital and other charges—the charges of all kinds—are being met from the total revenue of the undertaking as a whole. Furthermore, the line of policy pursued by the Edinburgh Corporation Gas Department must have stimulated and increased considerably the demand for gas; and the greater the demand for gas by such appliances, the more the line of output becomes levelled-up, and the lower becomes the average cost of production and delivery to the consumers. By such reduction of the valleys

in the curve of consumption, and by the enlargement of the production, the whole body of consumers is benefited; and those consumers are ratepayers equally with the traders who raised this question as to the Corporation acting *ultra vires*. It is the duty of the latter to adopt a policy which will enable them to conduct the undertaking in the most economical manner, and render the best service to the consumers. Whether the charges are made directly as stove or other rental, or made indirectly through the charges for gas, they are there all the same, though not defined as an item in the latter. Whether in Edinburgh, if the policy had been to charge direct and fully adequate rentals, the consumption of gas would have increased in the like manner as under the existing policy, we cannot say; but this we do assert, that now it would be a very dangerous thing for the Corporation, in the interests of their undertaking and consumers, to have to change their policy. The consumers have become accustomed to the present policy in this particular; and if the Corporation were compelled to charge full rentals, it might result in many of the appliances being returned, their consumption lost, and inestimable harm done to the undertaking and the general body of consumers. Therefore we are glad that Sheriff Orr was able to declare that the Corporation were not acting illegally, but within their statutory rights.

The same arguments, and more, apply to showrooms. They are an integral part of the system of gas supply. They are intended to stimulate the demand for gas-using appliances, which enlarge the demand for gas. It would be impossible to treat showrooms as a portion of the business which could be divisioned off, and to keep an exact account of their financial side. They have an intrinsic value to the undertaking which cannot be expressed in money; and that value is *plus* any direct revenue traceable to the showrooms in respect of sales or hiring-out. The showrooms may be regarded as advertisements. With just as much sense, the traders might have sought financial proof of the profitableness of other methods of advertising—say, in the papers or by circulars. As Sheriff Orr says, showrooms, and the exhibiting of gas appliances in them, are part and parcel of the gas-supply business.

We congratulate the Edinburgh Gas Department on the commonsense issue to this attempt to limit their discretion and operations, and to bring about a change of policy, which, in the circumstances, might be very prejudicial to the interests of both the undertaking and the consumers generally.

The Propaganda of the Coal Merchants.

WITH maximum shade temperatures running from 71° on July 4 to 88° on July 7, with a drop to only 79° on July 8, and then with a gradual ascent to 92° on July 13, the conditions are hardly suitable for talking or writing about fires of any description. But we are forced to do so by circumstances. The coal merchants continue to busy themselves with the work of trying to induce people to fill their coal-cellars at "summer prices." We do not blame them, so long as they do this in a legitimate and fair manner. A few years ago, the coal merchants were not so keen. Some of them, or rather their representatives, treated their customers in an autocratic manner; and the customers were most grateful to them when they were favoured by receiving a dole of coal. But matters have changed. There is more coal available; and householders are not so anxious to stock coal to-day—partly through that cause, and partly because, with a gas-cooker and one or two gas-fires in a house, there is no need to rely upon the coal-cellar, nor to have such large recourse to it. However, while the sun has been giving such powerful demonstration of its thermal value, the coal merchants have not ceased their industry in trying to secure orders for stocking cellars. Market reports tell us that the household coal trade is in a very flat condition; and, when the market reports say this, it simply means that householders are not buying. This is the time, too, when gas undertakings that look forward are advising householders to have gas-fires fixed; and they are doing so, in readiness for the winter that will come.

It has not always been that the coal merchants have adopted the methods they now employ in circularizing householders as to the virtues of coal for heating and cooking, and judiciously omitting to mention that coal entails more labour than gas, that it is smoke and dirt producing, and that unlike gas it cannot be extinguished and relighted without creating more labour and dirt. Those are disadvantages to avoid which the householder is willing to pay something as far as he or she can; and, moreover, the view is growing that, through the ability to discontinue the gas-fire when not required, while the coal fire has to be continued in service, there is not in actual cost a great deal of difference between the two methods of heating, with all the labour, dirt, and smoke saving advantages of the gas-fire thrown in. But these are matters the coal merchants are ignoring in their new propaganda; we cannot expect them to do otherwise. But their omissions must be pointed out by their competitors. We have a fresh instalment of literature printed and published by the Coal Merchants' Federation of Great Britain. There is one circular entitled "Health and Happiness in the Home." That is what we all desire; but the carrying of coal from the cellars to the various rooms about the house, the cleaning-up of fire-places, the laying of fires, attending to them, and the visit of the chimney sweep do not tend to happiness. We trust the Coal Merchants' Federation of Great Britain are not unmindful of the fact that they are not the only possessors of intelligence in this country. Intelligence, it may be said, is fairly prevalent among the householders who are the recipients of their circulars. In this circular, it is stated that the coal fire is the perfect system of heating. How can a thing be perfect that creates labour before it can be used, and does so through its active life by the incessant production of dirt and smoke? The coal fire, it is also stated, continues to hold its own for heating and cooking alike. How do the Coal Merchants' Federation account for the upwards of 5 million gas cookers and grillers in Great Britain and Ireland, to say nothing of the almost innumerable gas fires and water-heaters now in service?

There is a reference in the circular to "economy." It is stated that for an expenditure of 8d. in coal, a healthy cheerful fire can be provided sufficient to heat an average room for fifteen hours, while the cost of gas for similar service would be at least three times as much, and for electricity twelve times as much. That is not a true comparison; and the coal merchants know it is not, unless they are altogether ignorant of the most elementary facts connected with heating. It is rarely that a room requires in it a fire for fifteen hours at a stretch. The gas-fire is only used as and when needed, and so a saving can be effected compared with the cost of the disabilities attaching to the coal fire. But the coal merchants' comparison is not true. Eight-pennyworth of coal at 48s. (assuming 12,500 B.Th.U. per lb.) would contain a potential heating value of 380 000 B.Th.U., which, used at 24 p.ct. efficiency for heating, would give to the room heat equal to 91,200 B.Th.U.; a gas-fire, using eight-pennyworth of gas at 9d. per therm, would for heating, at 75 p.ct. efficiency, give heat to a room equal to 66,675 B.Th.U., without labour, dirt, ashes, or smoke. The difference would be easily wiped out through the savings to be effected by the ability to use the gas-fire only as and when required. In view of these facts, how do the Coal Merchants' Federation justify the statement that the cost of gas for similar service would be at least three times as great as for coal?

We are sorry to see the coal merchants have descended to the low level of some electricians in their propaganda work. In another circular, we find the question: "Can you open your morning paper without reading about some new case of gas-poisoning?" They do not say that the major part of the cases is due to suicide; and not a word is said about the considerably larger number of fires and deaths caused by sparks, &c., from coal fires. It is also said that "a gas-fire is an expensive, inefficient, and unhealthy substitute." Further that "you get real heat from a coal fire—not the deceiving and useless glare generated by a gas-fire, which leaves you cold." It is also stated that "a coal fire is necessary for the proper ventilation of the house. Gas has an entirely opposite effect." We can only label this as a deliberate falsehood, and the other statements as distinctly foolish. We think it is time that every gas undertaking in whose district these circulars are distributed should bring the local coal merchants to book for disseminating such slanderous statements and untruths about gas, which are deliberately intended to injure the business of the local gas undertaking. An example ought to be made of one of the firms; and this would have a salutary effect upon the others. There are ways and means of doing it. At the same time, the "B.C.G.A." should obtain a set of the prints issued by the Coal Merchants'

Federation, and prepare circulars dealing with them passage by passage, and in no sparing manner, so that gas undertakings could flood their districts with them—as the coal merchants are doing with the Federation productions.

Gas for Industrial Purposes.

The Board of Trade have drafted clauses dealing with the supply of gas for industrial purposes. The Central Executive Board of the National Gas Council and their Parliamentary Agents have them under consideration.

Mine Subsidences and Gas-Works.

We recently referred to the Royal Commission that has been set up to consider matters relating to mine subsidences. The National Gas Council are asking the District Boards with gas undertakings within their provinces that are concerned in this matter, to nominate representatives to serve on a Committee for the purpose of considering the policy to be advocated, and as to whether evidence should be placed before the Commission.

Exhibitions.

From the report of the Executive Committee of the British Commercial Gas Association, which was presented to the General Committee on Monday last week, it appears that, in connection with the British Empire Exhibition, the formation of a Committee has been completed, and they are setting to work on the preparation of a plan and scheme for an exhibit worthy of the industry. The National Gas Exhibition at Birmingham is getting well under way. The "B.C.G.A." are in close touch with the organizers, and are rendering all possible assistance. Space has been taken by the Association, for the purpose of bringing "all sections" of the work of the Association before the gas industry and the public. We are a little dubious as to the statement regarding "all" sections. The work of the Association has very many ramifications.

British Dyestuffs.

The speech of the Chairman (Sir William Alexander, K.B.E.) at the annual meeting of the British Dyestuffs Corporation, Ltd., contained matter both satisfactory and the reverse. The Corporation have made sweeping technical progress; but there have been many difficulties to encounter, and much work to be done. Now, so far as business abroad is concerned, the exchanges are against the Corporation; and they have a capital built up in other times that does not conform with the trading conditions of the present. Naturally the gas industry, with its large production of tar, is interested in seeing the Corporation make headway. There is satisfaction in learning that the dye-making industry has been definitely established in this country; that the quality of production is equal to that of the best German types; and that the bulk of the requirements of the colour-using industries can now be satisfied. Another important thing is that the British industry has given to the consumer a security of supply which was lost to him in 1914. But in the current state of exchange, this country cannot compete with Germany in neutral markets. On the other hand, prices have been reduced considerably at home. Technically, the Corporation appear to be in a strong position, but it is the commercial and the financial outlook that are the grounds of misgiving—so much so that there are some shareholders who think it would be wise to consider a scheme of reconstruction. The Directors, however, do not deem the time opportune for this; but the prospect of dividends would seem very remote unless something is done. One among the many interesting statements of the Chairman is that, during the four years ended Oct. 31, 1922, the Corporation and the associated companies spent a total of over £400,000 on research. Much of this expenditure has been incurred in establishing the constitution of colours not previously made in this country, and in working-out processes for the manufacture of the necessary new intermediate products. This field has now been well covered, and expenditure in this direction is diminishing. Henceforth the principal aim will be to utilize the research organization for the purpose of securing better efficiencies and increased yields of products in actual manufacture, and of introducing such colours as are in steady demand by the consuming trades.

Local and National Advertising.

We hope the "B.C.G.A." do not intend to stereotype the form of their advertising too much. Advertisements that always have the same appearance, though the wording may be changed, will not, in our opinion, continue to attract any more than a show-room window that looks much the same year in year out. However, it is learned from the report of the Executive Committee that, with a view to increasing the effect of advertising, they have arranged for contracts for standard spaces in newspapers, and that specially prepared copy and illustrations, with standard type-setting and lay-out, be used throughout. It is thought that such advertisements will make the maximum appeal, and will be most readily recognized by the public. The Executive also suggest that individual undertakings should link-up their local with the national and district advertising, and so increase the force of both, by inserting in their local papers similar and simultaneous advertisements, the copy and blocks for which can be supplied by the Association.

Research Endowment.

The recent munificent gift by Sir Alfred Yarrow of £100,000 for the endowment of research has been the subject of profound consideration on the part of the Council of the Royal Society. They desire to devote the proceeds of the money to the best possible purpose and advantage. They have come to the conclusion that for men who have proved their capacity for research, there is a deficiency of positions in which they can continue to regard research as the main occupation of their lives. It has therefore been resolved by the Council that the larger part of the ncome shall be utilized in the direct endowment of research by men who have already proved that they possess ability of the highest order for independent research. Consequently, a number of professorships will be founded, the holders of which will be expected to devote their whole time to scientific research, except that a limited course of instruction in the subject of their research may be given to advanced students. This will give to research definite recognition as a profession.

Miners' Wages Agreement.

The fourth attack has been made upon the mining wages agreement—this time at the annual conference of the Miners' Federation last week at Folkestone. The President (Mr. Herbert Smith), in his address, made no secret of his feeling that it would be disastrous to terminate the agreement. The conference, in committee, considered a resolution from the Lancashire district, advising the miners to vote in favour of giving three months' notice to terminate the agreement. According to one report, the districts which had instructions to vote against the agreement were Durham, Lancashire, South Wales, and Scotland, which in themselves constitute a majority of the Federation. In view of the instructions given by these districts, the situation was regarded as one of some gravity. The Executive submitted a resolution to the effect that the conference take no vote on the question of terminating the contract at the present time, but that the Executive be instructed to ask the coalowners for its revision as to: (1) The ratio of wages to profits, (2) increasing the minimum wage, (3) fuller information as to costs other than wages. This was a compromise suggested by Mr. Smith in his address, and by Mr. Frank Hodges. Durham broke away from the malcontents; and the proposal of the Executive was accepted by the conference as the best way of dealing with a difficult situation. To consider these proposals, the new Executive will ask for an early meeting of the National Coal Board, under the presidency of Sir William Plender, the Independent Chairman.

America and Coal Stoppages.

In the United States a proposal has been made to deal somewhat drastically with stoppages in the coal-mining industry. Last autumn a Federal Coal Commission was appointed by Congress; and they have issued a unanimous report. One proposal is that a Government authority should be created, and invested with power to require reports on the financial and operating sides of the industry, to prescribe methods of cost accounting, &c. Perhaps the most interesting recommendation is as to what should be done in the event of a cessation of operations in the industry. It is contemplated that the President of the United States should be

empowered to declare a state of emergency, to take charge of the mines, fix miners' wages, determine the compensation to be paid to the owners (subject to review by the Courts), and distribute the coal produced. Will it work? Another report dealing with the subject of suitable legislation is promised for the autumn.

Preferential Treatment.

Among other things the Miners' Federation did at their conference last week was to decide to ask for the perpetuation of the present levy of a penny a ton on coal production—the money to be devoted to the provision of pensions for aged miners. The Coal Mining Industry Act of 1920 legalizes for five years a levy of this amount for welfare purposes. With a production of 240,000,000 tons of coal a year, the penny brings in an income of a million pounds per annum, which is applied to all sorts of beneficent purposes for the welfare of the mining communities. In asking that the levy be continued after the five years, the miners desire the money to be used as a supplement to the State pension. A penny per ton may not be much; and we have no strong objection to it. But it must be said that the miners are always looking out for avenues by which they can get preferential treatment over other industrial workers. They have a seven-hour day now. The coalowners think the men, the industry, and the country generally would be in far better case with an eight-hour day. But at Folkestone four resolutions in favour of a six-hour day were remitted to the Executive for consideration.

PERSONAL.

Councillor GEORGE WALKER, who for many years has been Chairman of the Bradford Corporation Gas Committee, recently underwent an operation for appendicitis. He is making favourable progress towards recovery, but is not likely to be able to resume municipal duties for some little time.

Mr. GEORGE ROSE, who is one of the chief members of the Leamington Priors Gas Company's staff, has had the misfortune to meet with a serious accident. While cycling to the gas-works with the week's wages in a handbag, he was knocked down by a motor car, the back wheel of which was brought to a standstill upon Mr. Rose's chest. Most of the ribs on his right side were broken, and his face was also badly injured, the front wheel of the car having passed over it. We are, however, glad to be able to say that his condition is now steadily improving. This is the second occasion on which Mr. Rose has been injured in a street accident.

On his retirement on June 30, Mr. EDWARD PILBROW, Inspector-in-Charge of the Westminster office of the Gas Light and Coke Company, was the recipient of both good wishes and useful gifts from his colleagues and the men who had worked under him.

On behalf of the Directors of the Gas Light and Coke Company, Mr. D. Milne Watson (the Governor) recently presented a Louis XVI. clock and a pair of bronze statuettes to Mr. T. V. FENN, Deputy Controller of the Gas Sales Department, in view of his approaching retirement, and in recognition of his long period of service, extending over fifty years. The Governor referred to Mr. Fenn's faithful service with the Company, and said the Directors greatly appreciated the work done by him and the loyal way in which he had always carried it out. Mr. Fenn entered the Company's service in 1873. In November, 1895, he was appointed Divisional Inspector; and when the distribution department was split-up and the gas sales department created, he was appointed Deputy Chief Inspector to Mr. F. W. Goodenough, the title being changed in September, 1910, to Deputy Controller of the Gas Sales Department.

The many old friends of Mr. J. LOWE, M.Inst.C.E. (formerly of Glasgow), the Engineer and Manager of the Auckland (N.Z.) Gas Company, Ltd., will be pleased to learn that he and his wife and children are now in this country. They will remain here for the next few months.

Making Ice-Cream Cones with Gas.—Mention is made by the "American Gas Journal" of the employment of gas in connection with the manufacture of ice-cream cones. The apparatus used in making these cones can, our contemporary says, be best compared with a large wheel about 7 ft. in diameter lying on its side and revolving on the axle. This wheel is divided into thirty-six spokes, and on each is a double iron mould. These moulds are made in two parts, and are shaped like the familiar cones; the outside being a cone-shaped cup and the inside part a solid cone itself. The liquid batter is allowed to flow into the outside mould, and the inside mould takes its place automatically within the former, and squeezes the liquid dough into the shape of a cone. The moulds and cones are heated directly by gas-burners, and very excellent results are obtained. The gas and air are mixed in the proper proportion in a suitable device, and the mixture is fed to the burners through a single tube. The machine will make 2000 cones an hour.

ELECTRICITY SUPPLY MEMORANDA.

REFERENCE has already been made in the "Memoranda" to the fact that the Incorporated Municipal Electrical Association have been meeting in Scarborough, under the presidency of Lieut.-Col. W. A. Vignoles, of Grimsby. His Presidential Address was an appeal for greater action in respect of domestic electrification—particularly for cooking purposes.

Electric Cooker Indecision.

From the address and a discussion on a paper by Mr. T. Hall, of Burton-on-Trent, on "Showroom and Sales Development," it is obvious that the professional men of the industry have not reached any settled policy in respect of electric cooking. Twelve months ago the President read a paper on the "Extension of the Uses of Electricity for Domestic Purposes." As a result of that contribution, a Special Committee was formed, called the Electrical Apparatus Committee—the intention of their existence being that they should deal with the joint purchase of electric cookers by the undertakings. But this particular object has not been fulfilled, inasmuch as it was soon discovered that the demand for bulk purchase did not arise, because so few undertakings were ordering any cookers at all; and therefore the energies of the Committee have been concentrated on obtaining information on electric cooking and cookers, and circulating it among the members. That is a confession of small effect from all the propaganda there has been to get electricity concerns and the public to adopt electric cooking. But the Committee claim that through their work there has been a continuous growth of interest, which interest has been intensified by other causes—such as the dropping-off of custom for power and lighting, owing to bad trade and the need for economy. As a result, more hiring schemes for domestic apparatus have been put into operation, and numbers of cookers are now let on hire. Touching this point, we see that Mr. Christie, the Electrical Engineer of Brighton, has given up hiring-out apparatus. A gas-cooker is a hardy piece of goods; but it is found even with them that some consumers who hire them do not give them the attention that their good service deserves. Electric cookers have more critical elements about them than gas-cookers; and therefore the greater the care that should be bestowed upon them. But Mr. Christie has come to the conclusion that people who have apparatus on hire do not bestow upon it the care of those people who purchase outright. That by the way. The President advised that something more might be done by educating members of staffs, members of electricity committees, and local contractors in the use in their own households of electric cookers. We have asked over and over again why it is the case that among those in the service of electricity such little use is made of electric cookers, if the high claims preferred for them can be substantiated. We cannot get a satisfactory answer to the inquiry. Notwithstanding, the President says that anyone who has employed electricity, where the rate per unit is reasonable, knows that the idea that it is expensive is wrong. What is a "reasonable rate," and what is meant by "expensive?" Both are terms to which people give different meanings. Does Lieut.-Col. Vignoles mean "expensive" in relation to other agents for doing *an equal quantity of work?* However, he urged that in this matter there should be both local and co-operative effort.

Electric Cooker Use.

One or two other points on the same subject from the proceedings. Mr. R. B. Mitchell, of Glasgow, is the Chairman of the Electrical Apparatus Committee; and in a statement on the subject of electric cooker development, he said that a *questionnaire* had elicited the fact that there are approximately 5000 electric cookers in service in this country, and probably upwards of 80 p.ct. of these have been installed under schemes of hire or hire purchase. The manufacturers expected that their output this year would be something like 5000. He himself has installed 500 during the past twelve months. In this country, there are in use upwards of 5,000,000 gas cookers and grillers. Another point submitted by Mr. Mitchell is that the electric cooker of to-day fulfils all requirements; and the oven and grill are superior to any competitive apparatus—whether oil, coal, or gas. We are afraid we cannot accept any such postulation. The standard for comparison is the best electric cooker and the best gas-cooker now on the market. Mr. Mitchell, however, agrees that the alleged superiority does not extend to the boiling-plates; but he is not without hope that the efficiency of this part of the cooker will be increased in the near future. This happens to be the part of gas-cookers on which in the houses of the middle and artizan classes the largest amount of work is done for hot water provision, boiling foods, frying, and so on. It is calculated that something like 80 p.ct. of the work of the entire gas-cooker is carried out on the hotplate. This is bad for the electric cooker—suffering as it does from high cost for B.Th.U. and a low efficiency. In his paper, Mr. Hall stated that they have at Burton-on-Trent sixty electric cookers fixed. Mr. Long, of Norwich, says that in his city 160 have been sent out since January; and they are fixing them at the rate of about ten a week. Other members did not appear to have numbers of which they could boast. It always happens with novelties that, at the outset of their life, they secure a certain amount of adoption.

Joint Meter Readings.

We agree that where municipalities run both gas and electricity departments, it would not be a good thing for the reading of meters for both supplies to be a joint affair. Each department should have its own meter readers. Our reason for this is that the whole of the business of each undertaking is carried on separately; and therefore it is better that such work as the taking of meter registrations should be done by its own men. Where a company run both gas and electricity as a joint business—with the work of management, clerical staff, salesmen, and all other duties conducted as one business — then there is not the same objection to the gas and electricity meter readings being performed by the same person. "Meteor" in the "Electrical Times" makes reference to this matter, so far as municipal undertakings are concerned, in a paragraph, headed "A Dangerous Proposal." The "proposal" emanates from Judge Robertson; and it appeared in the "Edinburgh Evening News." To him, it appears most wasteful that the two departments under one Corporation, should each have its own meter readers. It seems to him that the staffs should be placed under the City Collector; that the charges for gas and electricity should be put on one account; and that there should be one collector of the accounts. Of course, this all looks very economical, and less troublesome for the consumers. But in the end, we doubt whether economy would be served—certainly there would be a fair amount of confusion both for the consumers and in the municipal finances. It would not by any means add to the clarity of the financial position of each undertaking to have these joint collections.

The Danger!

But as to "Meteor's" anticipation of danger. He describes the proposal as "most reactionary and dangerous." The reason he gives is highly amusing. In practice, he says, "it operates against electrical progress; it means restraint of trade; it plays into the hands of the man in possession (the gas man of ancient establishment), and against the newcomer." This belittling of electricity is something new in the writings of our electrical contemporaries. They get positively illogical at times in their efforts at defending the position of electricity. Electrical operation, one minute, in their opinion stands first in every direction. It is incomparable; it is going to suppress all other lighting and heating agents. But with all the lavish prediction as to what will be, we go along, and very little happens in the way of expansion of electricity into new lines of business. Yet if assertion were true, electricity should sweep other agents for lighting, heating, cooking, and power off the face of the earth, and that promptly. The "ancient establishment" of gas would—electricity being so superior—stand about as much chance as the "four-wheeler" against the taxi-cab. But it is not all as represented; gas has unassailable virtues which appeal to the public. The slow movement of domestic electrification requires careful protection, or it would fade away altogether. This is recognized; hence the acknowledgment that it would take little to knock it off the unstable pedestal upon which it has been placed by electrical imagination. The curious reason advanced against joint meter reading and collection—"curious" when one considers the claims made on behalf of electricity—arrests attention. We are told that "a powerful municipal gas department, with big capital invested, and a huge staff, is soon able to make its weight felt; the joint reader and collector becomes a gas propagandist almost every time." This is a very fine testimonial to the popularity of gas. But fancy a joint meter reader and collector taking the trouble to be a partizan. Supposing the present electric meter reader is given the job to read also the gas-meters in an area, which would he advocate—electricity or gas? Just one more instance of the absurdity. "Meteor" says: "We have only to note how frantically eager the gas people are to bring about joint meter reading and collection whenever the corporation run both services. The deduction is so obvious that we need say no more." We should like "Meteor" to give us an answer to this question: Why is it the National Gas Council have been urged by so many municipal gas departments to resist—and they are resisting—the movement for placing all the work associated with the finance of the trading undertakings in the custody of borough treasurers? In this matter the National Gas Council believe in municipal undertakings being run separately in every particular.

Electric Cooking in the Schools.

In the same issue of our contemporary, we see a note which informs readers that the Building Sub-Committee of the London County Council have agreed to receive a deputation from the Electricity Committee of the Poplar Borough Council on the subject of electric lighting and the teaching of electric cooking in the Council Schools in the borough. This is regarded as a very important step in the right direction; and it is hoped, by our contemporary, that it will result in the greater use of electricity in the schools. Of course, what the Council can afford in the schools may not at all represent what the people can afford in their homes. It is supposed that, so far as lighting is concerned, the only thing that stands in the way of electricity is the cost of conversion from gas to electricity; and there is naturally a disinclination on the part of a public body like the London County Council to incur capital expenditure if it can be avoided. Perhaps they may have the same disinclination respecting the provision of electric cooking equipment. We think a good idea would be for the responsible Committees of the County Council to investigate the amount of work the poor do on their gas-cookers—work which necessitates a greater use of the hotplate than of the oven. Having obtained this information, they should then investigate the relative costs for doing that work by gas and electricity. Then the agent which can show an economy over the other, and so would be an advantage to the householders whose children attend the Council schools, should be the preferred one for teaching purposes. Cooking and boiling operations come within that section of educational work that is labelled "Domestic Economy." It is not the business of the Council to have "Domestic Uneconomy" taught in their schools. We heartily endorse the submission of the writer of the note that "in claiming that electric cooking is superior to gas, it is foolish to attempt to belittle the latter." But we beg to be allowed to dissent from a statement in which the writer adopts the rôle of prophet. He says that "just as electricity is slowly but surely displacing gas for lighting, so will it displace gas for cooking." But again we fall into line, when the writer reflectively remarks that "progress must be slow, because the competition is strong." However, it is thought if electrical people can get their cookers into the schools, they will have taken an important step forward. We know of one school into which an electric cooker was introduced. The first thing that the practical teachers sought to learn was the cost of doing a certain amount of work on the cooker, including the provision of hot water—just as would be done in a household in which gas is used. The difference in cost astonished them. The next thing that happened was an electrical defect that rendered the cooker unfit for use for some days—until an electrical reparation man condescended to come along and repair the mischief. For a time there was still interest in that cooker, because of the novelty. The last time we saw it, it was standing forlorn; the accessories that had been supplied with the cooker were stored away in the oven; rust had begun to show itself. We felt almost sorry for the derelict. It stood there telling its tale—silently but effectively. Will any of those who tried that cooker advocate the use of electricity in the houses of the poor?

New Housing Schemes.

The electricity industry knows from former experience that its competitor the gas industry does not allow it to have a walk-over. The fact makes life far more interesting for both industries. An electrical writer, referring to the Housing (No. 2) Bill, says, when it reaches the status of an Act, it should be beneficial to the electric wiring industry. But the writer quickly drops into a lower key when he says that there is no certainty that even one-tenth of the houses built under the housing schemes would be electrically lighted. It is hoped, however, that those local authorities responsible for the houses who also supply electricity in their districts will do their utmost to arrange for them to be electrically lighted. But apparently there is some fear of an economical tendency on the part of the Ministry of Health, who have not hitherto viewed with particular approval the installation of electric light in such houses. In some cases, it is said they have gone so far as definitely to disapprove of it when it has been decided that in any case a gas-service will be brought in for cooking purposes. And quite right, too. It seems a most irrational thing for these houses to have lumbered upon them the cost of two services when one would suffice, and when the more economical one for the tenants is the cheaper to instal. The electrical writer, however, suggests that new business should be sought among these houses. He advises that lists of the houses to be built should be obtained, and that the question of wiring should be discussed early with the builders or owners. It is said that wiring contractors are at present by no means full of work; and they, too, will doubtless do their utmost to get electric light installed in as many of the new houses as possible. We shall rely upon gas undertakings being promptly in the field, and doing a good part in any fresh business that is "going." Another electrical writer says that an encouraging thing is the activity being shown by members of local bodies who represent labour in trying to develop the use of electricity for domestic purposes. The large number of trade union gas workers should ask for an explanation on this point. There must be some reason other than that of benefit for the workers. What is that reason? Has it anything to do with Communism?

Southern Association of Gas Engineers and Managers (Eastern District).—The next meeting of the Eastern District of the Association will take place on Tuesday next, July 24, at the Institution of Gas Engineers, No. 28, Grosvenor Gardens, S.W., at 2.30.

Commercial Gas Company's Dividend.—The Directors of the Commercial Gas Company have declared a dividend for the half-year ended June 30 of £6 p.ct. per annum, less income-tax, on both the 4 p.ct. capital stock and the 3½ p.ct. capital stock, payable on Aug. 15.

South Metropolitan Memorial Window.—The Dean and Chapter of Southwark Cathedral have accepted the offer of the South Metropolitan Gas Company's War Fund Committee to defray the cost of a window in memory of the 386 employees of the Company who made the supreme sacrifice in the great war. The window will consist of three lights, and will be placed directly over the altar of the ancient retro-choir or Lady Chapel, which is one of the most ancient and historic portions of the Cathedral Church.

NEW APPOINTMENT FOR PROF. SMITHELLS.

DIRECTOR OF THE SALTERS' INSTITUTE.

The Court of the Salters' Company have appointed Prof. Arthur Smithells, F.R.S., to be Director of the Salters' Institute of Industrial Chemistry in London, from Oct. 1 next.

The Salters' Institute was established in 1919, with the general object of advancing the interests of industrial chemistry, and, in particular, to further the scientific training of picked young men who might enter upon that calling. The Institute is not an institution, but an organization, with its office at the Salters' Hall, where the Director, acting with a Committee, administers the scheme approved by the Company for the apportionment of the funds annually set aside for the purpose.

Prof. Smithells, whose term of office at Leeds University does not expire until the end of September, is now resident in London, and will go to Leeds as required for University business. He has informed a correspondent of the "Yorkshire Post" that this new appointment has only recently come into question, and was not connected in any way with his decision to retire from the Chair of Chemistry at Leeds. The work, however, is of the kind he was hoping to pursue, as it lies directly in the path of his life-long interest and experience. It is expressly a part-time appointment, and will leave him free to carry out the additional plans he has had in view to occupy him in London. He is specially attracted by the fact that the Salters' Institute represents a voluntary effort of manageable proportions unhampered by any restrictions of a Governmental or bureaucratic kind. It can pursue its enterprise in freedom, and vary it in the light of experience. It will, on the one hand, Prof. Smithells hopes, keep him firmly linked to the chief centres of chemical education, and on the other will add most acceptably to his acquaintance with the leaders and the conditions of chemical industry. "I believe, too," Prof. Smithells added, "that from my own point of view it will be rather a blessing, after being so long accustomed to a pretty strenuous daily round, to have part of my time marked-out for regular duty. Indeed, I think it a piece of great good fortune to retire, if not on half-pay, at least on part-work."

NATIONAL GAS COUNCIL.

Meeting of the Central Executive Board.

The Central Executive Board of the National Gas Council met at No. 30, Grosvenor Gardens, S.W., on July 10.

ELECTION OF CHAIRMAN AND VICE-CHAIRMEN.

Mr. D. Milne Watson was unanimously re-elected Chairman for the ensuing year, and Mr. Ald. Phillips, Mr. William Cash, and Mr. J. H. Ellis, the retiring Vice-Chairmen, were also unanimously re-elected.

GAS REGULATION ACT—PROCEDURE IN CONNECTION WITH ORDERS UNDER SECTION 10.

The procedure in relation to an Order under section 10 of the above Act, where opposition was encountered in the House of Commons, was reported and considered. Objection was raised to this procedure on the ground that it was a retrograde step, and had the effect of reimposing the complications of the Gas-Works Facilities Act, 1870. The procedure necessary for the promotion of Provisional Orders before the passing into law of the Gas Regulation Act had been so great that a number of the smaller undertakings had been precluded from going to Parliament. It was arranged that this matter should be taken up by the Council.

GAS REGULATION ACT (SECTION 10)—SUPPLY OF GAS FOR INDUSTRIAL PURPOSES.

Clauses drafted by the Board of Trade in connection with the supply of gas for industrial purposes only were submitted for the Board's consideration. Mr. Browne (Messrs. Dyson Bell and Co., the Council's Parliamentary Agents) having reported thereon, it was decided to postpone further consideration of these draft clauses until the next meeting of the Board, in order to give the members an opportunity of studying the clauses in conjunction with the points raised by the Council's Parliamentary Agents.

HOUSING (NO. 2) BILL—DEMOLITION, &C., OF DWELLING-HOUSES.

It was reported that the Council had made arrangements for an amendment to be moved in Committee of the House of Commons to a new clause, which was moved for insertion in this Bill, preventing the demolition of any dwelling-house fit for human habitation without the permission in writing of the local authority. It was considered that this new clause would have acted prejudicially to gas undertakings, and that immediate action was required. The amendment excluded from the operation of the clause any property which an undertaking had been authorized to acquire by Act of Parliament. The Council are glad to report that the new clause was not passed in Committee; but the Council propose to follow carefully the course of this measure through its remaining stages.

ROYAL COMMISSION ON MINE SUBSIDENCE.

It was reported that a Royal Commission had been set up to inquire into matters affecting mine subsidences. It was decided to ask the districts of the Council concerned in this matter to nominate representatives to serve on a Committee for the purpose of considering the policy to be advocated, and whether evidence should be placed before the Commission.

RAILWAY RATES.

The Council reported steps they propose to take, in co-operation with other interests, with a view to obtaining further reductions in railway rates.

MODEL BYE-LAWS AND REGULATIONS FOR THE PREVENTION OF WASTE, CONTAMINATION, OR MISUSE OF WATER.

A conference at the Ministry of Health, held on June 19, with regard to the Model Bye-Laws and Regulations for the prevention of waste, contamination, or misuse of water was reported. The following interests were represented at this conference: British Waterworks Association, London County Council, Architects, Sanitary Institute, Builders, Property Owners' Association, &c., together with the Officers of the Council.

It was finally agreed that a small Committee should be set up with a representative of the Ministry as Chairman, with a view to advising the Ministry as to what amendments were necessary, taking as a basis the Model Bye-Laws (Series XXI.) issued by the Ministry. This Committee would consider any representations which the gas industry desires to put forward in connection with the matter. The Ministry announced that they were not prepared to include in the Bye-Laws any specification. It was decided that the Gas Appliances Specification Sub-Committee, who have hitherto been dealing with this matter, should be asked to continue consideration of the question.

LOCAL BUILDING BYE-LAWS.

An interview on July 4, with a representative of the Ministry of Health with regard to the application of these Bye-Laws to gas undertakings, was reported. It was decided to appoint a small Committee to consider this matter and report to the Board.

TRAFFIC CONTROL.

It was reported that an Advisory Committee was to be appointed to deal with the traffic difficulties arising within a radius of twenty-five miles from Charing Cross. The breaking-up of roads and road repairs would receive the consideration of this Committee. It was felt that the gas industry should be consulted in connection with this matter; and it was decided that steps should be taken with this end in view.

The next meeting of the Board will be held on Sept. 11.

AT THE CONVERSAZIONE OF THE INSTITUTION OF CIVIL ENGINEERS.

The Hele-Shaw Streamline Filter.

THOUGH most of the exhibits at the conversazione held at the Institution of Civil Engineers last Thursday evening were of a character only indirectly concerned with the work of the gas engineer, one was of a nature which in the future may be of real practical assistance to the gas industry.

This was the streamline filter, shown by Prof. H. S. Hele-Shaw, D.Sc., LL.D., F.R.S., M.Inst.C.E., which was the subject of a lecture before the Royal Institution some little time ago. For the first time, the filter was exhibited on a commercial scale—a neat and compact piece of apparatus capable of treating 200 gallons of water per hour.

The principle underlying the filtration is entirely new, and is dependent on the formation of an extremely fine sieve, through which the liquid to be filtered is forced by pressure. The sieve is built up of a large number of sheets of specially prepared paper, pierced with holes of large and small diameter, which are compressed into a compact mass. The holes of each paper are placed in register, so that, when viewed from above, the composite mass has the appearance of a solid structure pierced by vertical tubes. The paper is non-porous, and filtration takes place in a horizontal direction. The liquid undergoing treatment is forced (in this particular plant at a pressure of 15 lbs. per sq. in.) into the large holes of the paper, which in the compressed condition form the large-diameter vertical tubes, of a height depending on the capacity of the apparatus, and capable of withstanding a lateral pressure of 1 ton per sq. in. The liquid passes through the minute spaces, which are of molecular dimensions, separating the sheets from each other, into the tubes of smaller diameter, from which the clean filtered liquid is taken. The deposited dirt does not permeate the paper, but collects on the periphery of the larger tubes, from which it may be flushed-off or removed at will.

We were able to see some remarkable separations effected by the new appliance. A blue "Drummer" dye was taken; complete separation being made. This would fall into the solution class rather than suspension, such as muddy water. It would therefore appear that a rapid process of osmosis had taken place. A more delicate test was shown of the filtration of a solution of erythrosin, the sodium salt of tetriodofluorescein, of a concentration of 1 part in 5 million. Here again, complete separation was made. A solution of decinormal potassium permanganate may be passed through the filter—the resulting liquid being colour-

less; and a solution of common salt may be reduced in concentration.

A problem with which the oil industry generally have been confronted is the complete separation of water from oil. It is, consequently, of considerable interest to record an experiment in which dull oil—dull by reason of a trace of water—was made perfectly clear. This simple process of streamline filtration seems to afford a solution to emulsification troubles. With regard to oil filtration, the apparatus is particularly applicable for ships fired by oil fuel, owing to its continuity of action and the ease with which sediment may be flushed-out without dismantling or disturbing the normal action. All that is necessary is to instal an additional filter over and above the required capacity, when, by alternating, a definite output may be obtained continuously.

The fact that the apparatus has been successfully applied to the treatment of gas-works effluent liquor is the consideration of most consequence to gas engineers. We were privileged to see the result of this filtration, and noted with interest that the deposit had in no way permeated the paper, and was in a condition for easy removal. In this case the latter would not be effected by the usual method of flushing, but would require to be scooped or "rodded" out. This is a matter to which many have given thought without arriving at any satisfactory conclusion. No doubt the near future will see development in this direction as in many others, of which a few have been outlined. Prof. Hele-Shaw's streamline filter is a fascinating invention full of possibilities, and possesses an admirable simplicity desirable from the practical standpoints of low capital and maintenance costs. Its operation is the reverse of intricate; and the material of which the filter is composed should have a life of long duration.

SPECIAL MEETING OF THE INSTITUTION OF GAS ENGINEERS.

Revision of an Article of Association.

A Special Meeting of the Institution was held in the Board Room at No. 30, Grosvenor Gardens, Westminster, S.W., last Wednesday morning, when there was submitted for confirmation the resolution with reference to the amendment of Article 40 passed on June 26 during the meeting at Belfast.

Mr. James Paterson, M.A., of Cheltenham, who presided, explained that he was doing so because the President (Mr. Samuel Tagg) had unfortunately been detained in Preston, and therefore, as Senior Vice-President, the duty devolved upon him (Mr. Paterson) to take his place. As they were aware, the business before the meeting was of a formal character—namely, the confirmation of the resolution passed at Belfast for amending the wording of Article 40, which he would ask the Secretary to read.

The Secretary (Mr. Walter T. Dunn) then read Article 40, in its amended form, as follows:

The Council shall each year prepare a list of persons whom they nominate as suitable for the offices of President, Vice-President, Honorary Secretary, the Ordinary Members of Council, in lieu of those whose offices will be vacant, and Auditors, for the ensuing year. It shall be open for any three Members, or Associate Members, to propose any other Member, or Associate Member, as an Ordinary Member of Council, the consent in writing of such Member, or Associate Member, having been first obtained. If such proposal be duly made in writing and delivered to the Secretary, together with the written consent of the Member proposed, not later than two months previously to the Annual General Meeting, the Council shall accept the nomination and add the name of the person so proposed to the balloting list. No Member, or Associate Member, shall join in more than one such nomination in the same year. A copy of the balloting list shall be sent to each Member, or Associate Member, of the Institution, entitled to vote, at least fourteen days before the Annual General Meeting; *and each Member, and Associate Member, shall vote by placing a cross against the name of each of those he desires elected, and the total number voted for shall be equal to the total number of vacancies. Any balloting list in which a Member or Associate Member has voted for a number of names either more or less than the number of vacancies shall be rejected by the Scrutineers.*

The balloting lists must be returned to the Secretary in a sealed envelope, not later than three clear days, exclusive of Sunday, before the commencement of the Annual General Meeting, and shall be deposited by him in the ballot-box, unopened. The ballot-box shall be opened by the Scrutineers appointed as hereinafter provided; and the result of their scrutiny shall be announced by the Chairman of the Meeting immediately after the reading of papers and communications and the discussions thereon have been concluded, or at any other convenient time. The candidates having the greatest number of votes shall be elected; and where in any case the votes are equal, the choice shall be determined by drawing lots in such manner as the Chairman shall direct.

On the proposition of the Chairman, seconded by Mr. Thomas Goulden, the resolution carrying into effect the amendment shown in italics was unanimously confirmed.

The meeting terminated with an expression by the Chairman of thanks to those present for their attendance.

Southern Association of Gas Engineers and Managers (Western District).—There will be no meeting of the Western District of the Association during August. Due intimation will be made when the date of the September meeting is fixed.

THE PROGRESS OF APPLIED CHEMISTRY.*

An article was presented in the "Journal" for May 9 which indicated the impressions received by M. Etienne Audibert, Chief of the Research Station of the Central Coal Committee of France with regard to fuel research in Great Britain. Except for the unstinted praise which was given to the research work on the subject of gasification, carried on for the Institution of Gas Engineers under Prof. J. W. Cobb, at Leeds, his remarks were not particularly complimentary. The results of research, however, do not rush in a continual stream immediately an investigation is commenced; and it must be remembered that only comparatively recently has research in the gas industry received its due recognition.

The Annual Reports of the Progress of Applied Chemistry, issued by the Society of Chemical Industry, are too well known to require any indication of the nature of the contents of the volumes; and as it is, of course, impossible adequately to review a review—moreover one highly condensed, and only relating essential facts—we will confine our remarks and extracts to the two sections dealing with fuel and gas—the former written by Prof. J. W. Cobb conjointly with Mr. H. J. Hodsman, the latter contributed by Dr. G. Weyman. To those conversant with the publications of Prof. Cobb, the outstanding qualities are the fairness with which the work of others is reviewed, the grip on essentials, and above all constructional criticism. And on reading the portion of the volume relating to the gas industry, far from being dismayed by a lack of progress, we are impressed by the remarkable number of highroads towards higher efficiency in the utilization of fuel, which have been opened up during the past few years.

With regard to smoke abatement, the point mentioned recently by Prof. Armstrong, at a meeting of the Royal Society of Arts—that the sulphur dioxide in the air did infinitely more injury to vegetable life and dwellings than any smoke—is emphasized; and in this direction the only remedy lies in the gasification of the sulphur and its subsequent removal. Important changes have taken place in modern ideas as to the free-burning quality of coke, which formerly was thought to be dependent upon the content of volatile matter. Sutcliffe and Evans ascribe the combustibility to the attainment of a suitable cell structure—given which, the temperature of carbonization is relatively unimportant; and these investigators claim to have attained the right structure by a preliminary fine grinding of the coal, and subsequent briquetting. After this preliminary treatment, it is stated that the production of free-burning fuel may be effected in existing carbonizing plant. The experience of Bunte and Kölmel supports this view. According to their experiments, the ignition temperature of coke depends in no way upon the percentage of volatile matter. Another problem mentioned is the question as to whether or not it is commercially feasible to subject boiler fuels to carbonization at low temperature prior to combustion. Experiments at Newcastle have been made in which carbonization was carried out by superheated steam; and, states the report, the successful outcome will be of great interest and importance.

Other subjects which have received much attention and development are those of coal-cleaning and the recovery of waste fuel. A much closer removal of mineral matter can be made if the coal is initially broken to a sufficient degree of fineness. Froth-flotation has resulted in the removal of fusain—a constituent the extraction of which suffices to convert some non-coking to coking coals. An interesting extract from the report concerns the work of F. S. Sinnatt, who has made a study of the effects traceable to fusain in Lancashire coals, in which it is present to the extent of 1 to 2 p.ct. It is lower in volatile matter and higher in ash than the other constituents, and is undesirable if the coal is intended for carbonization. It reduces the average percentage of volatile matter, and diminishes the caking power of the coal. Coal was shown to fracture preferably along fusain bands; and, in view of its softness, it is not surprising that fusain is found to concentrate in coal dust. There is at some coking plants a practice of re-incorporating washery slurry with the slack to be charged—a practice which can only lead to deterioration of the quality of the coke. Several proposals have been made for the recovery of fuel from furnace ashes; and in the "Journal" for Feb. 21, results were given of a process which gives full satisfaction.

In the section on gas, written by Dr. Weyman, a novel proposal which has been made for the enrichment of water gas is noticed. This was referred to on a previous occasion in the "Journal" [Nov. 22, 1922, p. 488]. Powdered coal is suspended in the gas stream, where the temperature is brought up to about 2000° Fahr. The dust particles are carbonized by the heat of the upward rising gases; and the coke particles, formed agglomerate, sink on to the surface of the fuel bed. Another point of interest concerns the presence of iron carbonyl in water gas; the work of Bunte and Terres being quoted, in which they describe some striking effects of depreciation of the lighting capacity of incandescent mantles, owing to the deposition of ferric oxide, resulting from the decomposition of iron carbonyl.

Undoubtedly the volume is of great value, and should be read by all who are desirous of keeping in touch with the progress of applied chemistry.

*Annual Reports of the Society of Chemical Industry on the Progress of Applied Chemistry (1922.—Vol. VII.). London; Society of Chemical Industry. Price, 12/6.

THE RADIATION £500 PRIZE.

The "Rado" Burner.

At the Savoy Hotel on Wednesday last, Mrs. A. KNIGHT, of No. 23, Waverley Road, Southsea, was presented with the prize of £500 offered by Radiation Limited for the most appropriate name for their new burner. The winning word was "Rado."

Mrs. HILTON PHILIPSON, M.P., in presenting the prize, conveyed her feelings of happiness in a most charming manner. She said that her pleasurable task was enhanced by the knowledge that Mrs. Knight was a widow whose only son was in India.

Mr. H. JAMES YATES (Chairman of Radiation Limited), in congratulating Mrs. Knight, said that the number of entries for the competition were astounding, amounting to more than ten thousand. Apart from the prize which had just been awarded, there were a hundred consolation gifts of £1. The "New World" cooker was the result of many years of costly experimental and research work. The boiling-burner had such outstanding features peculiarly its own that it had been thought worthy of a good trade-mark; and in order to have the opportunity of obtaining the best name, a competition had been arranged. The burner was a great step in advance—one of the biggest since the introduction of the incandescent mantle. Its efficiency was remarkably high, and it could never become clogged-up in use. Incomplete combustion, waste, and unpleasant odours could never occur with their new type of burner, which would in future be known as the "Rado" burner, and which was fitted in all "New World" cookers. Another important feature of the "Rado" burner was the regulating-tap, by which the flames could be varied to suit all kinds of cooking. The first quarter-turn provided a minimum flame, suitable for stewing. Half-a-gallon of stew could be kept just short of boiling-point with only 1¼ c.ft. of gas per hour—in other words, three hours for less than one farthing. The oven was constructed so that the entire space was available for cooking operations. Pastry or bread could be cooked as perfectly at the bottom of the oven as at the top. An automatic heat-regulating device, known as the "Regulo," was provided, by which the temperature best-suited for any specific form of cooking could be secured. Once the cooking was commenced, the cooker could be left till the fixed time stated in the instructions; and the food would be found to be perfectly cooked. This device obviated the necessity for the cook to open the oven door from time to time to watch the progress of cooking. With the "New World," cooking could be accomplished at pre-war cost. The use of gas-cookers, continued Mr. Yates, was extending enormously day by day; and large as the orders had been in the past, the constituent Companies of Radiation Limited were to-day experiencing a still greater demand. They were satisfied that this would be further increased as the new cooker became more widely known. He had no hesitation in forecasting this, as already they had received the highest encomiums from those who were using the cooker. The gas undertakings of the country formed one of the most progressive sections of industry; and Radiation Limited owed them a deep debt of gratitude for the assistance given in the competition. Once they arrived at a time when gas was universally used for cooking, heating, and the supply of hot water, the fog problem, which was now so serious a matter—in particular in large cities—would have been solved.

MRS. PHILIPSON HANDING OVER THE CHEQUE.

CALCULATIONS IN HEATING AND VENTILATION.*

IT is difficult to find a text-book which treats adequately with the practical calculations with which all heating and ventilating engineers find themselves confronted in their daily tasks. Students of the subject (whether in training or practice, all are in reality students) will therefore be glad to find a new publication, bearing the above title and written by C. S. Coleman, D.Sc. (Eng.), Assoc.M.Inst.C.E., which, achieving its objects, grapples exclusively with practical considerations. Its aim is definite, and has been maintained throughout; and, consequently, one does not look for new theories or revolutionary ideas. The text, which is of a condensed nature, is mathematical rather than descriptive; but its pithy character does not prevent it from containing a mass of essential facts, which, freed from any trimmings, can be grasped at once by the reader.

The subject of house-warming by gas was long the pleasure-ground of controversialists—and, it may be added, faddists—due solely to the fact that appropriate consideration was not given to two all-important factors, ventilation and the humidity of the atmosphere. We are therefore pleased to see that four ample chapters have been devoted to the subject of humidity control—matter with which it would be well if all connected with the selling of gas appliances were really conversant. It is a subject the importance of which cannot be over-emphasized. Already it has resulted in the disappearance of "little bowls of water;" and in the future a wider appreciation should serve to eliminate all false prejudice.

The first seven chapters of the volume deal with applied mechanics, and the next seven concern themselves with physics. The reason for this is explained in the author's preface, in which he states that it has been his experience that most students need some kind of revision in this part of the work, and that it is useful to have some text to which handy reference can be made. In all, there are twenty-six chapters. It is not possible to enumerate the many subjects dealt with in the last eleven chapters, but the following will give an indication: Direct radiators, direct hot-water heating and indirect gravity heating, the flow of air in ducts, the capacities of fans, and a short consideration of boiler practice and efficiency. It is noted with regret that the matter of the relative values, efficiencies, and costs of various heating media is not touched upon; and it is felt that the inclusion in the text of the health value of radiant heat as compared with convected heat, to mention only one of many important aspects of good heating which spring to the mind, would have enhanced the worth of the book.

The examples throughout are most practical; and the language has been kept sufficiently simple to be understood by all classes of engineering assistants engaged in this type of work. Advanced mathematics has been avoided, and in two instances only has the calculus been employed. The volume should make a strong appeal, and be of very definite assistance, to those whose work lies in the field of heating and ventilation—a subject of first importance to the gas industry in particular and to the community in general.

* "Calculations in Heating and Ventilation." By C. S. Coleman, D.Sc., Assoc.M.Inst.C.E. London: Longmans, Green, & Co. Price 15s. net.

EXPERIENCES OF COKE RECOVERY BY THE "COLUMBUS" PROCESS.

From time to time, information has reached us as to the economies which have been effected by the installation of the "Columbus" coke-recovery apparatus; and it is thought that some of the experiences gained at a few of the gas-works where coke recovery is carried out by this method will be of interest to our readers.

Of the plant installed at Blackburn, Mr. G. P. Mitchell (Engineer and General Manager) states that the separation is of a most satisfactory nature, and estimates that the profit on the year's working will amount to approximately £1250. The recovery in this case is about 15 tons per week at present; and the winter load will double this figure. Results of separation show recoveries of 44 p.ct. of coke, 23 p.ct. of clinker, and 33 p.ct. of fine ash. Similar figures were obtained at Brighton; the yields being 43 p.ct. of coke, 32 p.ct. clinker, and 25 p.ct. dust, notwithstanding that the material was taken off a stock heap, and had previously passed through a 1¼-in. mesh screen.

Mr. A. Caddick, Engineer of the Croydon Gas Company, has prepared the following interesting table giving the working results of the "C" Columbus waste-fuel recovery apparatus erected at these works.

At Hampton Wick, Mr. W. E. Price expresses satisfaction with the working of the separator. Here the material passes through the machine at the rate of 2·12 cub. yards per hour; the following separation being effected: Clinker 16·7 p.ct., fine ashes 29·2 p.ct., and coke 54·1 p.ct. The same appreciation is shown by Mr. F. W. Cross, of the Lea Bridge District Gas Company, who has obtained 41·6 p.ct. of coke, 36·9 p.ct. fine ash breeze, and 21·5 p.ct. clinker from the pan ash treated. These figures are very similar to those obtained by Mr. J. Mitchell (Engineer and Manager of the Nelson Corporation Gas-Works), who considers the process to be a paying proposition to any gas undertaking. He obtains: Coke recovered 42·15 p.ct., ashes 31·41 p.ct., and clinker 26·44 p.ct.

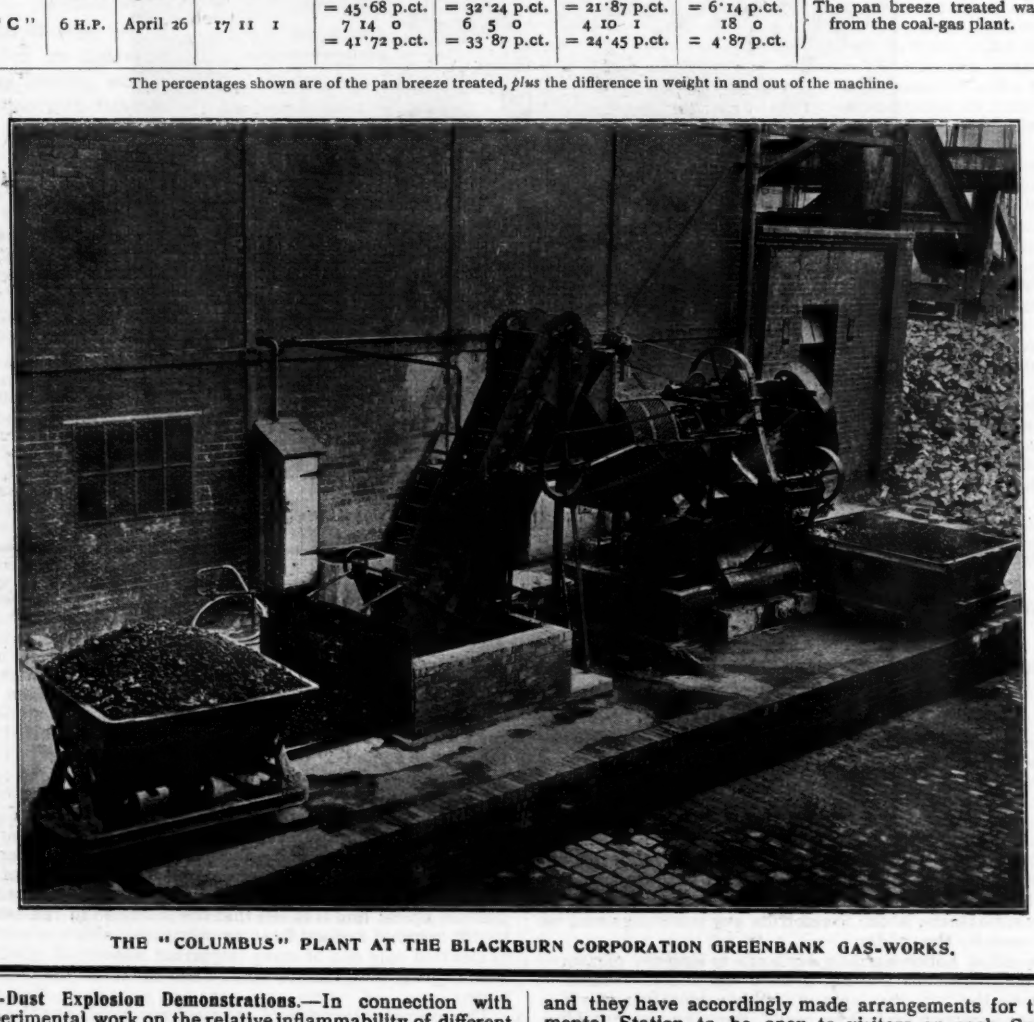
The general opinion of satisfaction is augmented by the results obtained at Oxford and Richmond. In the former case, Mr. W. E. Caton gives the following figures: Coke 43·1 p.ct., clinker 25·0 p.ct., and fine breeze 31·9 p.ct. This recovery closely resembles that effected at Richmond, where, from data transmitted by Mr. E. G. Hutchinson, a separation of 40·3 p.ct. coke, 27·1 p.ct. fine breeze, and 32·6 p.ct. clinker was made. Mr. F. Prentice, Engineer and Manager of the Ipswich Gas Company, obtains a recovery of 47·8 p.ct. of coke, and for the bye-products—clinker and fine ash—receives 2s. 6d. and 4s. per ton respectively.

Finally, Mr. F. Durkin gives the following figures as representing typical working of the plant at Southampton.

Coal-gas plant—	
Coke	53·12 p.ct.
Clinker	22·39 ,,
Ashes	24·47 ,,
Carburetted water-gas plant—	
Coke	41·66 ,,
Clinker	31·94 ,,
Ashes	26·38 ,,

Type.	Motor Power.	Date, 1923.	Weight of Pan Breeze Treated.	Weight of Coke Recovered.	Weight of Fine Ashes Recovered.	Weight of Clinker Recovered.	Difference in Weight In and Out Machine = Water and Clay.	Remarks.
			T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	T. C. Q.	
"C"	6 H.P.	April 24	24 8 1	11 18 1	8 8 1	5 14 1	1 12 2	
				= 45·68 p.ct.	= 32·24 p.ct.	= 21·87 p.ct.	= 6·14 p.ct.	The pan breeze treated was from the coal-gas plant.
"C"	6 H.P.	April 26	17 11 1	7 14 0	6 5 0	4 10 1	18 0	
				= 41·72 p.ct.	= 33·87 p.ct.	= 24·45 p.ct.	= 4·87 p.ct.	

The percentages shown are of the pan breeze treated, *plus* the difference in weight in and out of the machine.



THE "COLUMBUS" PLANT AT THE BLACKBURN CORPORATION GREENBANK GAS-WORKS.

Coal-Dust Explosion Demonstrations.—In connection with their experimental work on the relative inflammability of different coal-dusts, the Safety in Mines Research Board propose to arrange during the summer for a series of coal-dust explosion experiments at the Mines Department Experimental Station, Eskmeals, Cumberland, somewhat similar to those held last year, with the object of impressing upon mine workers the importance of the coal-dust problem. The Board are of opinion that as many as possible of those engaged in, or interested in, the coal-mining industry should witness these demonstrations; and they have accordingly made arrangements for the Experimental Station to be open to visitors on each Sunday from July 15 to Sept. 30 inclusive, with a possible extension to the first two Sundays in October, when a large-scale coal-dust explosion will take place, followed by another demonstration to show the efficacy of stone-dust in preventing the ignition of coal dust. It is proposed to demonstrate each week with coal dust to be obtained from certain seams in the various coalfields. The address of the Mines Department (who have drawn-up a provisional programme) is Dean Stanley Street, Millbank, Westminster.

BRITISH ENGINEERING STANDARDS ASSOCIATION.

Annual Meeting.

The British Engineering Standards Association held their fifth annual general meeting on Thursday, July 12, at the Institution of Mechanical Engineers. The Chairman, Sir Archibald Denny, Bart., in reviewing the year's work, laid stress on the fact that the Association were faced with a deficit of about £1700; and he hoped that His Majesty's Government, who represented the purchasing public, as well as industry as a whole, would assist in putting the finances of the Association on a more stable basis. The national character of the work of this organization, devoted to simplification and the promotion of national economy in engineering and allied industries, was too well known to require enlarging upon. It was not a profit-making concern; it had nothing to gain from, but much to give to, industry generally and the country as a whole.

The continually increasing amount of work with which the Association had to deal as a result of outside pressure, as well as the natural progress shown in all sections, necessitated more generous financial support than was given at present. Neither His Majesty's Government nor industry generally would appear fully to appreciate the value of the labours voluntarily given by the 2000 engineers who formed the Association who were doing so much for the home, as well as for the export, trade of the country.

Picture-Theatre Heating by Gas.

It is stated by Mr. Eugene B. Milener, of Baltimore, in the pages of the "Gas Age-Record," that one of the fields to which space heating with gas has shown itself particularly adaptable is the moving picture theatre. The requirements of this class of service are particularly exacting, and gas has shown its supremacy in consequence of its flexibility and ease of control. The building code in force in his city requires that places of public amusement be ventilated by a change of air at least ten times each hour. This is accomplished either by mechanical or natural means; but when added to the cooling effect of frequent opening of doors, the loss of heat is tremendous. The fact that heavy ventilation must be resorted to, with its consequent chilling, combined with the consideration that a theatre too warm will not attract patronage, presents quite a problem to the heating engineer, and shows the extreme importance of an exact control of temperature at all times. Thermostatically controlled gas-fired heating equipment, with its instant response to changing conditions, has demonstrated that it is better suited to meet these varying demands than any other known device. The first central gas heating system was installed in a Baltimore theatre five years ago; and since then an ever-increasing number of installations has been made. The biggest example in the country of theatre heating with gas is the Rivoli, at Baltimore, with a seating capacity of over 2400, and many additional rooms and promenades. Air is blown over batteries of radiators; and there is besides a large amount of direct steam radiation in portions of the building not reached by the blower system. Steam is supplied by five tubular gas-boilers, with a maximum gas-burning capacity of 9000 c.ft. per hour. The whole battery is controlled by one heat regulator. After the last performance, the temperature is reduced to 55°, and a clock attachment on the thermostat automatically raises it to 70° the next morning. Thus manual labour has been entirely eliminated. Another gas-heated theatre in the same city has a seating capacity of 1000.

Society of British Gas Industries.—There is to hand from the Secretary (Mr. Arthur L. Griffith) a copy of the new edition of "Rules and List of Members" of the Society of British Gas Industries. The President for 1923-24 is the Right Hon. Lord Weir of Eastwood; the Chairman of Council, Mr. Frederick C. Tilley, M.I.Mech.E.; and the Vice-Chairman of Council, Mr. J. Wilfrid Drake. The date of removal of the Society to their new offices will be announced later.

Gas-Driven Alternators.—An illustrated account appears in the current issue of the "Engineer" of a central station power plant having many interesting features which has recently undergone a series of tests at Manchester, and will shortly be erected on its permanent site at Salisbury, Rhodesia. It consists of two Browett-Lindley four-cylinder, vertical, four-stroke cycle gas-engines, each direct coupled to a 300 KW. alternator with an exciter constructed by the Electric Construction Company, Ltd., of Wolverhampton, and four 300 H.P. double-draught gas-producers made by the Dowson and Mason Gas Plant Company, Ltd., of Levenshulme, Manchester. The contractors for the whole scheme are Messrs. Hubert Davis and Co., Ltd., of South Africa and London, who are also supplying all the apparatus necessary for changing from 220/400 direct-current to 2000 volts three-phase 50-cycles, including converters and other equipment, to the specifications of the Consulting Engineers to the Municipality of Salisbury (Messrs. Clifford Jones and Searle, of Johannesburg), and with the collaboration of Mr. C. H. V. Baskerville (the Resident Electrical Engineer).

CORRESPONDENCE.

[We are not responsible for opinions expressed by Correspondents.]

Road-Tar Consistency.

SIR,—In a paragraph under the above heading in the last "Monthly Notes from Recent Publications" (see "JOURNAL," *ante*, p. 253) Mr. Hailstone states that "where large bulks of road-tar mixtures have to be dealt with . . . quicker means of conducting the viscosity tests have to be devised." May I be permitted to point out that, as a result of my work, to which reference is made, the consistency at 77° Fahr. may be calculated from the consistency at any temperature between 60° and 90° Fahr., thus largely eliminating the difficulty to which Mr. Hailstone refers of adjusting the temperature to the correct point.

As regards the "undue prolongation" of the time of sinking with the more viscous materials, this is never more than 200 sec. at 77° Fahr. with ordinary tar macadam matrixes; and in the case of bituminous mixtures, the penetration test may be used. Of the disadvantages mentioned by Mr. Hailstone, the chief, in my opinion, is the large bulk of tar necessary; and if a test could be devised for accurately determining the consistency of a small quantity, this would be a tremendous advance.

I would like to add that the feature above referred to is a great asset to the "JOURNAL," but would be made more useful if fuller information were given to enable the reader to refer to the original papers.

D. C. BROOME.

Penmaenmawr and Trinidad Lake Asphalt Company, Ltd., Penmaenmawr, July 14, 1923.

REGISTER OF PATENTS.

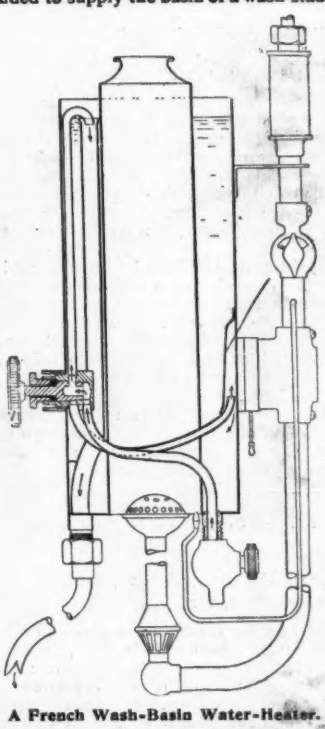
Gas-Heated Water-Heating Apparatus.—No. 175,272.

MALADRY, H. J., of Paris.

No. 3618; Feb. 7, 1922.

Convention date, Feb. 9, 1921.

This invention relates to a gas-heated water-heating apparatus intended to supply the basin of a wash-stand, or to supply, intermittently, small quantities of water at a predetermined temperature; and the object is to provide an automatic gas regulating device of the kind including a thermostatic capsule acting upon a valve in the supply pipe; the capsule being in contact with the apparatus at the point where the cold water is admitted.



A French Wash-Basin Water-Heater.

By reference to the vertical section reproduced, and to the arrows marked thereon, it will be readily understood that if the three-way-cock (seen to the left) is in the position shown, the outlet-pipe will deliver cold water. If, on the contrary, the cock is rotated, the cold water passes round and then towards the bottom of the apparatus. This water is thus heated by the contact of the flue, and, being subjected to the pressure of the cold water, rises towards the top of the vessel. The outlet pipe then delivers hot water.

The regulating device, arranged at the level of the water-jet breaker, automatically maintains the water supplied at a predetermined maximum temperature—for instance, 65° C. The device comprises a thermostatic capsule containing (say) methylated spirits, of which the boiling point is about 66° C. This capsule acts in the well-known manner on a dish-like member slidably mounted in a suitable guide, and which operates a piston or plunger, which, in turn, operates an obturator or valve, by which the passage of the gas is allowed or cut off. A pilot jet is fitted to the burner.

Gas-Burners.—No. 174,375.

SZÖCS, J., of Budapest.

No. 2100; Jan. 24, 1922.

Convention date, June 17, 1918.

This invention relates to burners of the kind in which a combustible mixture is caused to pass through a body of porous refractory material, which is maintained in a condition of incandescence by combustion of the mixture. The object is to provide an improved form of gas or vapour burner of this kind in which a flame is formed on the body of the porous refractory material.

With this object in view, a porous refractory body having compara-

tively large pores or interstices freely communicating with one another is made by pressing the refractory in a plastic condition through a number of small holes in a plate or die, and filling a suitably shaped mould with the extruded material. After being dried and baked, the moulded body forms a steady and pervious mass, and is mounted in a burner in such a manner that the combustible mixture passes through the porous refractory body to the atmosphere. When the mixture is ignited, the hottest part of the flame is drawn back into the porous refractory material, which therefore quickly becomes incandescent.

The refractory bodies may be made with thin impervious walls or coats of the same material as the porous part of the body; the impervious walls being removed in those parts of the surface of the body through which the gases must pass.

The patentee states that he is aware that it has been proposed heretofore to make porous refractory balls to use in gas-stoves and for other purposes by extruding the refractory material through small holes, pressing it into moulds, and finally baking and drying it. Such balls, however, are suspended in an ordinary gas flame, whereas according to his invention the porous refractory body is mounted in a burner so that the combustible mixture from the burner passes through it.

Gas-Burners.—No. 197,059.

Britten, W. M., of Los Angeles, and Harshman, C., of Huntingdon Park, California.

No. 5354; Feb. 14, 1922.

The principal aim of this invention is to provide a burner in which the efficiency of combustion and the temperatures produced are extremely high. At the same time, the burner is designed so that the efficiency will not vary appreciably with widely varying gas pressures. The burner consists of a series of gas-nipples inclined at an angle of 30° to the burner tube. These eject into a chamber which also is inclined at 30°, and in which admixture with air takes place. The shape of the chamber is such as to allow of the most thorough mixing of the gas and air; and this is effected by forcing the jet to impinge on a flat surface, at such an angle that the gases will not rebound from the surface, but will roll along it, producing a scrubbing action. A second surface placed approximately parallel to the first, and reasonably close thereto, prevents flashing-back. The velocity of the issuing gases is maintained as high as possible.

Furnaces for Heating Retorts.—No. 197,993.

Toogood, H. J., and Dempster, R., and Sons, Ltd., both of Elland.

No. 1846; Jan. 21, 1922.

This invention relates to a producer furnace for the manufacture of hot producer gas for heating retorts employed in gas manufacture. The patentees explain that in such producers it is necessary that the coke should be at a high temperature of incandescence in order properly to gasify the carbon of the coke to form good and abundant producer gas; but they point out the clinker troubles consequent upon high temperatures, and state that to introduce, as a palliative, water vapour, either in the form of steam or water, is not by any means a complete preventive.

According to their invention, the grate is adapted to act as an inclined-bar screen which, with the exception of a relatively or negligibly narrow aperture to the ashpan, receives the whole weight of the gradually descending mass of incandescent coke. Each inclined bar is arranged to be shaken manually to shear the clinkers or agglomeration of coke; and means are provided for enabling them to be independently adjusted, so as to regulate the size and formation of the aperture leading from the fire to the ashpan.

To improve the application of water vapour, each grate bar is grooved so that water, controlled for each half of the grate, is carried down the steep bars to every square foot of the grate, whereby a better and more uniform duty can be obtained over all the grate area.

Gas-Burners.—No. 198,022.

Helps, G., of Nuneaton.

No. 4820; Feb. 18, 1922. No. 5684; Feb. 27, 1922.
No. 6402; March 4, 1922.

This invention relates to the rests for vessels for gas rings or for atmospheric burners of the type having a burner body and a flat head which together form the passage for the outlet of the gaseous mixture.

According to this invention, a ring having on it rests is carried by, and located outside, a gas-burner of the above type or a gas ring; the ring being capable of removal from, or capable of movement with respect to, the burner body or gas ring. In the case when the head is movable so as to act as a valve, means may be provided whereby the head can be rotated by rotating the ring which carries the rests, or the rests may be carried by the valve head itself.

Starting Exhausters and Eliminating Risk of Back-Pressure.—No. 198,010.

Carr, M., of Dublin.

No. 4416; Feb. 15, 1922.

This invention provides for conducting gas, air, or other elastic fluid from the outlet delivery pipe to the inlet suction pipe of rotary and other exhausters; a pipe being connected to the inlet suction pipe and outlet delivery pipe over the respective valves. The object is to effect improvements in the art of starting such exhausters, and provide means for eliminating the risk of back-pressure during the operation. The invention is applicable to exhausters operating in connection with retort-houses and boosting stations, in which the exhausters may—when equipped according to this invention—be started while the inlet suction and outlet delivery valves remain shut.

Hitherto, says the patentee, the operation of starting an exhauster in connection with retort-houses and boosting stations has been fraught with considerable difficulties; and more especially has this been the experience of operators when the exhauster to be started is one of a series in action on a trunk main common to all during the operation. But as the improvement claimed enables the operator to start and accelerate the speed of the exhauster, agreeably to pre-determined requirements, prior to opening the inlet suction valve, the difficulties referred to are removed, the procedure simplified, and the risk of back-pressure eliminated.

Cooking Stoves.—No. 198,043.

Oakley, P., and Stoves, Limited, both of Warrington.

No. 5273; Feb. 23, 1922.

This invention, relating to cooking stoves, has particular reference to such as are heated by a separate oil stove, or by a bunsen flame. In some types of stove there is an oven and boiling or simmering orifices on the top plate; suitable flues for directing the heat to the required places being formed in the body of the structure.

The invention consists in the provision at one side of the oven of one or more series of holes one above the other and in direct communication with a heating chamber, and of dampers adapted to be operated by handles connected to them from the outside of the outer casing of the stove (without opening the oven door) so as to direct the heat from the heating chamber into the oven either at the top or bottom or intermediately. The foregoing is combined with a plate or baffle adapted to form a heating chamber in communication with one side of the oven and with a passage at the base of the stove through which the heat passes; the baffle or plate serving to direct the heated products of combustion to the oven flues and to the holes formed in one side of the oven.

Gas-Fire Burners.—No. 198,260.

Brown, J., of Falkirk.

No. 20,109; July 22, 1922.

This invention relates to gas-fire burners of the type including a chamber provided with a detachable cover-plate in which are formed the burner nozzles, there being fitted on the burner chamber a diaphragm provided with perforations corresponding to the nozzles. In connection with burners of this type it has been proposed heretofore to interpose between the source of gas supply and the burner nozzles a holed sheet which serves to prevent explosion when the gas supply is interrupted.

The present invention consists in the employment of a plurality of pierced discs interposed between the gas supply and the nozzles, and housed in pockets located below the nozzles. These pockets may be formed either in the detachable cover-plate or in the diaphragm.

Gas Grilling Apparatus.—No. 198,312.

Helps, G., of Nuneaton.

No. 10,810; Feb. 27, 1922.

By this invention griller burners may be used with a number of large burner orifices giving comparatively big flames in lieu of several small jets. The flames may be coneless or practically so, and project into tubes or radiants of metal or fireclay having a number of orifices on the under side through which the products are caused to pass and so heat-up the radiants much as they are heated in the case of gas-fires. The radiants, being horizontal or inclined to the horizontal, are supported preferably by a fixed projection on the burner side, or they may rest on projecting burner nozzles, and on the other side rest in half-round or flat fixed or hinged rests.

In the case of hotplates, the burner being secured to the under side of a hotplate, a fixed or hinged bar may support one end of the radiant. For separate grillers, which are not attached to hotplates, the burner may be made to form a frame, and be supported on legs having projections on which a shelf may rest and support a tin.

Screening Materials.—No. 198,756.

Head, Wrightson, & Co., Ltd., Wrightson, Sir T. G., and Ringquist, J. M., all of Thornaby-on-Tees.

No. 6573; March 6, 1922.

According to this invention material is screened by passing it through a number of chain loops suspended from a frame which can be rocked or revolved. The frame may consist of a central shaft whose ends are supported in suitable bearings, while near each end is a cross bar, the ends of the two cross bars being connected by rods on which the chains are threaded. Alternatively, shafts may be placed outside of the chain loops, or the chains may be loosely wound on a trommel to obtain a similar effect. The screen is preferably placed at an angle, or the lengths of the successive loops may increase from one end of the screen to the other, so that material entering the screen at the higher end passes down and is gradually screened, the large pieces being delivered at the lower end. In place of chains, flexible netting, wire, or other material may be employed to effect similar action.

Two-Stage Manufacture of Gas.—No. 198,777.

Travers, M. W., of Highgate, and Clark, F. W., of Lymm.

No. 6931; March 9, 1922.

This invention relates to the two-stage manufacture of gas. That is to say, the apparatus consists of a lower chamber for coke gasification, and an upper chamber for coal carbonization; and gas containing a small proportion of nitrogen and carbon dioxide is made by alternating periods of "blow" and "run."

The patentees, having found that the available sensible heat of the water gas from the lower chamber, whether superheated within practical limits of temperature or not, is insufficient for the complete carbonization of the coal in the upper chamber, propose to supply the heat necessary for this complete carbonization by forcing some of the gas which leaves the upper part of the carbonization chamber during the run through a regenerator which has been previously heated by the blow gas, and delivering the gas so heated to the lower part of the carbonization chamber. Secondary air may be introduced into the regenerator so that the blow gases may be burnt therein and give up also their latent heat.

Thus the quantity of heat passing into the carbonization chamber during the run is in excess of the quantity available from the gas produced by the action of the steam on the coke during the same period; and part of the heat energy of the fuel gasified during the blow is recovered and utilized regeneratively for the carbonization of the coal.

The particular plant is also covered by the specification.

APPLICATIONS FOR PATENTS.

[Extracted from the "Official Journal" for July 11.]

Nos. 17,036 to 17,693.

AKT.-GES. BROWN, BOVERI, ET CIE.—"Rotary pumps for gases." No. 17,372.

BONE, W. A.—"Process of recovering ammonia from gases or vapours." No. 17,681.

BOURRELLY, G.—"Gas-heaters, &c." No. 17,593.

CARVER, F. J.—"Pipe joints, &c." No. 17,330.

EVANS, O. B.—"Manufacture of water gas." No. 17,269.

FAURE, R.—See Bourrelly, G. No. 17,593.

FINCH, G. I.—See Bone, W. A. No. 17,681.

HELPS, G.—"Gas-stoves, &c." No. 17,634.

HUMPHREYS & GLASGOW, LTD.—See Evans, O. B. No. 17,269.

HUNT, H. W.—"Means for converting upright burners." No. 17,630.

JONES, F. G.—"Jointing metal pipes, &c." No. 17,090.

KELLY, T. D.—"Use of aqueous solutions for producing gases for power or fuel." No. 17,576.

KIRCHNER, L.—"Gas-igniting device." No. 17,230.

PLAUSEN'S (PARENT COMPANY), LTD.—"Preparation of iron oxide for purification of coal gas." No. 17,290.

PRITCHARD, F.—See Hunt, H. W. No. 17,630.

ROBINSON, H. E.—"Incandescent gas-burners." No. 17,444.

SCHOTZ, S. P.—See Plausen's (Parent Company), Ltd. No. 17,290.

SMITH, T. P.—See Carver, F. J. No. 17,330.

Carlisle Gas-Works Profit.

Mr. J. O. Buck, the Chairman of the Gas Committee, in moving the adoption of the report for the year ended March 31, said that the figures had reference to six months' working on the old plant and six months on the new installation. It was significant of the confidence of their Engineer (Mr. J. E. Blundell) that within fourteen days of the commencement of their new undertaking the old works were closed down altogether. During the year under review, they had spent £39,000 on coal and oil; while during the previous year, which had been entirely under the old system, these had cost £65,400. Wages showed a saving of £7365. These figures were a guide as to their future expectations. In 1921-22, £27,565 had been received from the sale of coke, as compared with £15,865 for this year. In sulphate of ammonia, owing to improved market conditions, there had been a gain of £1623. After they had paid their dues as regards income-tax, the repayment of loans, and interest on loans, £10,089 net profit remained. The quantity of gas sold showed a decrease of 15 413,000 c.ft. This had not been brought about by less consumption by the ordinary citizen, but was due to depressed trade conditions adversely affecting the industrial load. They owned an installation for the manufacture of gas of which they might well be proud; and the entire credit was due to the engineering ability and foresight of their Engineer. While they were imbued with the manifest engineering capacity of Mr. Blundell, they were also deeply impressed by his commercial ability.

Alluding to the results achieved, the "Cumberland News" says: "It is clear from Mr. Buck's statement that the profit of £10,000 for the year would have been much higher if the Committee had been in possession of their new works for twelve months, and not for six months only. But even £10,000 does not represent the year's gains. Two months ago Mr. Buck mentioned that the Committee had paid for a number of 'odd jobs' at the new works out of revenue. A sum of £16,800 is shown in the accounts as having been spent on 'repairs and maintenance of works;' and we may take it that the greater part of this money might, with strict propriety have been charged to capital account. Commendably, the Gas Committee have entered on a course of conservative finance; and we trust that they will persevere in it, and will resist any attempt by the Finance Committee again to use the works, utterly regardless of their own needs and development, as a means of reducing the rating burdens of the general body of the citizens, of whom the gas consumers form only a part, and, as Mr. Buck has himself said, the poorer part."

The Gas Light and Coke Company.—The Directors of this Company have declared dividends for the half-year ended June 30 as follows: On the 4 p.ct. consolidated preference stock at the rate of 4 p.ct. per annum, on the 3½ p.ct. maximum stock at the rate of 3½ p.ct. per annum, and on the ordinary stock at the rate of £5 4s. p.ct. per annum.

Cooking Demonstration at Whitworth.—During the past week a series of demonstrations has been given at Whitworth by Mr. R. Gamble Marks, of Southport. Judging by the large attendance, the methods illustrated were practical, and appealed to the users of gas-cookers. Owing to the great interest shown, the lectures will be extended for another week.

PARLIAMENTARY INTELLIGENCE.

HOUSE OF LORDS.

Progress of Bills.

Chesterfield Corporation Bill: Brought from the Commons; read the first time; and referred to the Examiners.

Rawmarsh Urban District Council Bill: Returned from the Commons, with the amendments, agreed to.

Torquay Corporation Bill: Read a second time, and committed.

Birkenhead Corporation Bill: Reported from the Select Committee, with amendments.

HOUSE OF COMMONS.

Progress of Bills.

Rawmarsh Urban District Council Bill: Lords amendments considered, and agreed to.

Chesterfield Corporation Bill: As amended, considered; read the third time, and passed.

Swanage Gas and Electricity Bill: Read a second time, and committed.

Lytham St. Anne's Corporation Bill: Reported, with amendments, from the Local Legislation Committee.

SOUTHERN RAILWAY BILL.

This Bill, which is to empower the Southern Railway Company to construct various new works, &c., and which was ordered to be reported for third reading by the Unopposed Committee of the House of Commons on Wednesday of last week, contains clauses for the protection of gas and water mains. For the protection of the Southampton Gas Light and Coke Company, there is a special clause which provides that the Railway Company, in constructing a new road authorized by the Act, shall not impede or interfere with the Gas Company's access to a certain private road, nor in any way interfere with the mains, pipes, or other apparatus of the Gas Company in that private road. The expense reasonably incurred by the Gas Company in altering the position of mains, &c., rendered necessary by the construction of the new road by the Railway Company shall, on demand, be repaid to the Gas Company. A further sub-clause was also inserted, giving the protection usually afforded to gas-mains in Railway Bills.

BARNSLEY GAS SPECIAL ORDER.

HOUSE OF COMMONS COMMITTEE.—Thursday, July 5.

(Before *Mr.* PENNEFATHER (*Chairman*), *Col.* DU PRE, *Mr.* H. MURNIN, and *Mr.* LOUGHER.)

An Order which the Board of Trade propose to make in respect of the Barnsley Gas Company, under section 10 of the Gas Regulation Act, 1920, was the subject of an inquiry by a Committee of the House of Commons, constituted as above, last Thursday week. This was the first occasion on which a dispute in regard to such an Order had been considered by a Parliamentary Committee.

Mr. H. E. SWALLOW (Messrs. Lees & Co., Parliamentary Agents) said that the Order was promoted by the Barnsley Gas Company, who had been supplying gas in Barnsley and numerous towns in the neighbourhood for over 100 years. The Order was about to be made by the Board of Trade under section 10 of the Gas Regulation Act, which section gave the Board power to make Orders dealing with matters which, prior to 1920, were the subject either of Bills in Parliament or of Provisional Orders. This procedure was almost in the nature of an experiment. There was one precedent, he believed—namely, the Land Drainage Act—for procedure by way of a Special Order; but the Gas Regulation Act might be said to be almost the first case in which Parliament had delegated to the Board of Trade power to make Orders which had statutory effect. Since 1920 the Board of Trade had made scores of these Orders, and they had passed through the approval stage by resolution without opposition in every instance except that of the present Order. In this case the Barnsley Corporation were aggrieved by the decision of the Board of Trade, and wished to raise in the House certain points affecting the Order. After careful consideration, it was decided by the House authorities that a matter of this kind should not be discussed on the floor of the House, and that the only way to deal with it was to refer it to a Committee. Objections had been raised by two parties, but agreement had been reached in one case—that of the Barnsley Corporation. The other objection was by the London, Midland, and Scottish Railway Company.

Explaining the terms of settlement arrived at with the Corporation, Mr. SWALLOW said there were only two amendments to be made to the Order. The first related to the price of gas. He explained briefly to the Committee the two systems of charging for gas by maximum-price and sliding-scale companies, and said that the Barnsley Company was a maximum-price undertaking, and were entitled to charge for gas a maximum of 14d. per therm. The Barnsley Corporation, however, had contended that the Company should become a sliding-scale concern; and the Board of Trade had agreed with this view. It was reasonable to say that one of the essential elements in fixing a standard price was that they should have stability as regards cost of manufacture and supply; and the Board of Trade view, as well as that of the

Company, was that at the present time prices were not sufficiently stable to fix a standard price. The Board of Trade had dealt with the matter by providing, in the clause under discussion, that at any time after three years from the making of the Order, they (the Board of Trade) might fix a standard price in lieu of a maximum. The idea of naming three years was that at the end of that time costs would be stable; and a standard price could then be fixed. The view of the Corporation, however, was that the standard price should come into operation at an earlier date than three years hence, if the Board of Trade felt in a position to fix a standard price. Accordingly, an amendment had been agreed upon between the Corporation and the Company, which they asked the Committee to approve, the effect of which was to bring the date forward to Oct. 1, 1924. Also, the clause in its original form did not make any provision by which representations as to the fixing of a standard price might be made either by the Company or by the Corporation, so that the amendment proposed would also bring in a provision by which either party could apply to the Board for the fixing of a standard price. The clause, therefore, would read—

> At any time after the first day of October, 1924, the Board of Trade may, if they think fit, on the application of the Company, or of the Mayor, Aldermen, and Burgesses of the Borough of Barnsley, by Order in writing, signed by a Secretary or an Assistant Secretary of the Board, fix a standard price in respect of gas supplied by the Company, and, as and from the date specified in such Order (in this Order referred to as the specified date), the provisions contained in the first Schedule to this Order shall come into operation.

(The Schedule dealt with the substitution of the standard for the maximum price, set out the usual provisions with regard to the sliding scale, and gave power for the creation of a special purposes fund and a reserve fund).

This clause was approved by the Committee at the close of the proceedings, when decisions on all the matters raised were given.

The next matter upon which agreement had been reached between the Corporation and the Company had reference to the reserve fund of the Company. Section 31 of the Gas-Works (Clauses) Act, 1847, enabled the Company to apply sums each year towards a reserve fund, until the fund reached a maximum of one-tenth of the nominal capital of the Company. At the moment the Company had no reserve fund, because it had been used during the abnormal war period to make up for the deficiencies in dividends. The apprehension of the Corporation was that the Company might apply in one or two years an unduly large sum from the profits to the reserve fund. The Company and the Corporation had therefore agreed a clause providing that, after Oct. 1, 1924, and until the Company became subject to the sliding-scale provisions, they should never apply more to the reserve fund than 1 p.ct. per annum of the total authorized capital (including loan capital) of the Company, notwithstanding anything contained in section 31 of the Gas-Works (Clauses) Act, 1847.

The Committee agreed to the insertion of this new clause.

Mr. Swallow informed the Committee that, in addition to this amendment, it had been arranged that an undertaking should be given by the Gas Company that they would reduce the price of gas charged to the consumer after Oct. 1, 1924. The present price charged was 1s. per therm, but the figure of the reduction had not been settled. This matter could not be included in this Order, because the subject of price was dealt with under section 1 of the Gas Regulation Act.

Some discussion then took place between the Committee and Mr. Canning (of Messrs. Beale & Co., Solicitors), who was speaking on behalf of the London, Midland, and Scottish Railway Company, and who asked for a short adjournment to enable his Counsel to appear. He was anxious that Counsel should be present, because the Railway Company considered the matters on which they had objected to be of the utmost importance. After consultation, the Committee decided to adjourn for two hours; but the Chairman made it clear that it must not be taken as a precedent for future occasions.

After the adjournment the Railway Company's objections were dealt with; the Railway Company being represented by Mr. W. E. Tyldesley Jones, K.C., and Mr. H. F. Bidder.

Mr. Swallow said that the first clause in dispute related to the supply of gas in bulk by the Company to any local authority, company, or persons upon agreed terms and conditions, but did not authorize the Company to lay mains or interfere with any street beyond their limits of supply. This, on the face of it, appeared to be one of the simplest possible clauses, and one to which the least objection should be taken. But the Railway Company maintained that the Gas Company should not be in a position (as they would be under the clause) to supply gas beyond their limits until they had satisfied the demands within their limits, whether for lighting, domestic, or industrial purposes, and that the clause should be amended accordingly. The proviso which the Railway Company suggested should be added was as follows:

> Provided that the Company shall not supply gas under this section unless they are satisfying, and will continue to satisfy, the requirements of gas for all purposes of consumers within the gas limits.

The proviso for which the Railway Company asked was, he submitted, entirely redundant, and it would be absurd to add any such provision seeing that the Gas Company's statutory obligations in regard to supply through their whole limits were so perfectly clear. In the first place, the clause in the Order was practically the model clause. The clause in the Order under discussion was less extensive than the model clause, but it had been inserted already, without any such modification as the Railway Company asked, in 32 Gas Orders. In one instance the clause had been altered to meet the case of the objection of the Railway Company. This was the Lea Bridge Gas Order, which contained a provision that any supply in bulk should not be given if, and so long as, that supply would interfere with the supply of gas within the gas limits. That Order was made in 1922. Also, he had been told that the insertion of the proviso in the Lea Bridge Order was not the result of a decision of the Board of Trade, but that it was put in by agreement between the parties; and this was a distinction to which, he ventured to submit, great importance was attached in Parliamentary Committee rooms. There were six grounds on which he asked the Committee to reject the Railway Company's proposal. In the first place, the Railway Company took it for granted that there was no obligation on the Gas Company to supply throughout their limits. The statutory obligations resting on a gas company to supply everybody who was entitled, under proper conditions, to ask for a supply, were such that there was no necessity for the proviso which the Railway Company suggested.

The Chairman drew attention to the words in the section "or any other prescribed distance."

Mr. Swallow said it was not the usual practice to go beyond twenty-five yards.

Mr. Tyldesley Jones said that the Barnsley Company had no other prescribed distance.

Mr. Swallow agreed. Gas companies could not be expected to lay mains here, there, and everywhere, just to supply one consumer. The same principle applied in the case of water and electricity supply. Gas companies' obligations had been laid down since 1871, and they were liable to penalties if they did not carry them out. In addition, since 1920 they had been under an obligation to give a very high pressure in all their mains. Since the Barnsley Gas Company had obtained an Order under section 1 of the Gas Regulation Act, they had been under an obligation to give a pressure of 20-10ths in any 2 in. pipe, except in the case of two areas, where they had been relieved of that obligation; and they were liable to penalties for not maintaining the pressure. These were the obligations of the Company, and he submitted that it was not expedient to alter them.

The second point was that the proviso which the Railway Company asked for might have the effect of extending the Gas Company's obligations under existing statutes, because it provided that the Company must not supply in bulk unless all demands had been satisfied within their area of supply. It did not say all "legal and proper" demands, but every demand that might be made throughout the whole of the Company's very extensive limits of supply. Thirdly, assuming that there was any ground for suggesting that the Gas Company's statutory obligations should be increased, then he submitted that such a proposal as this was absolutely unreasonable, because it would prevent their supplying a bulk consumer within reasonable distance of the gas-works if two or three consumers ten miles away had not been supplied. The Railway Company's suggestion was an attempt practically to preclude the Gas Company ever exercising the powers of the clause. The fourth point was that, if the Gas Company were called upon to supply an adjoining gas company, that undertaking would, naturally, want a secured supply. The Barnsley Gas Company would have to state the conditions under which they would supply; and if the suggested amendment to the clause were made, then the Company would have to make a condition to the undertaking to which they were supplying in bulk that they might cut-off the supply if it were proved at any time that they were failing to meet the demands of the consumers inside their own limits. The undertaking asking for a bulk supply would not contract under these conditions, and would go elsewhere.

Fifthly, the Company regarded this suggestion as somewhat of a reflection on their administration. If the Company had failed to meet the demands of all consumers in the past, there might be some case for asking that they should abstain from supplying beyond their limits until they had done all that was necessary and proper within their limits; but there was no such suggestion in this case. Lastly, who was to decide whether the Company had or had not fulfilled the demands of consumers within their limits? The proviso suggested by the Railway Company, and the clause inserted in the Lea Bridge Order, left the matter in the air, and no machinery whatever was provided by which the Company or anybody else could know whether or not they might enter into a contract for supply in bulk, or whether, having entered into a contract, they were entitled to continue the supply.

The only remaining clause to which objection was raised, said Mr. Swallow, was one providing that the Company should not be obliged to give from any main a supply of gas for any purpose other than lighting or domestic use when the capacity of the main was insufficient, or if such a supply would, in the opinion of the Company, interfere with the sufficiency of the gas required to be supplied by means of that main for lighting or domestic purposes. But for that clause the Company would be under an obligation to give a supply to a big trade consumer from a main which was insufficient for the purpose. The clause in its present form substantially had already been allowed by the Board of Trade in 34 Orders, all of which had come into operation, and he had been unable to find any Order in which the amendment which the Railway Company now proposed had been made, either by agreement or by any decision of the Board of Trade. The words which the Railway Company proposed should be added to the clause in this case were as follows:

> Provided that this section shall not apply to any main used by the Company for the supply by them of gas under a contract entered into under the section of this Order whereof the marginal note is "Supply in Bulk."

This clause, as at present in the Order, without the suggested amendment, was in the Model Bill of the House of Lords. If the Gas Company had contracted to supply an undertaking beyond their limits of supply with (say) a million cubic feet of gas per day, and the main used for the purpose was just large enough, the Railway Company wished to impose on the Gas Company the obligation to supply from that main any consumer who wanted gas for industrial purposes, as well as for lighting and domestic purposes. He suggested that it was reasonable that the Gas Company should have the same protection for a main properly used to supply gas outside their limits as for any other main. The clause in the Order was to protect the Company against unusually high demands for industrial purposes.

Mr. Swallow did not call evidence, being of the opinion that the case was sufficiently before the Committee. It was a question of principle mainly, rather than of fact.

The Case for the Railway Company.

Mr. Tyldesley Jones said that the consumption of gas by the

Railway Company, from the Barnsley Gas Company, for the year ended June 30 last was just over 2¼ million c.ft. He asked the Committee to bear in mind what the case was. The promoters were a statutory Company, having a monopoly over a certain area, and were, in fact, the only statutory authority in the district for the supply of gas. Under the Gas-Works (Clauses) Act, 1871, the obligation was imposed upon the Gas Company to supply gas to the owner or occupier of any premises situated within 25 yards of any of their mains, so that if a railway company had, as had the London, Midland, and Scottish Railway in this case, sidings, signal boxes, stations, &c., within 25 yards of a main, they had a legal right to require a supply. This was the ordinary position of a gas undertaking in this country to-day. There was no obligation in terms upon a gas company in any Act to lay additional mains; but companies found themselves bound to lay additional mains in order to perform their statutory obligations. To-day, gas was used as much for industrial as for domestic purposes. The Gas Company were asking the Committee to limit the legal obligation they were under at present. Why should they be relieved of this obligation? They could satisfy the demand by laying additional mains. Was a gas company to be allowed to say that they had laid certain mains, and they did not care how the demand for industrial purposes was to be met? The clause also provided that the Company should not be obliged to give a supply for any purpose other than lighting and domestic use "if, and so long as, any such supply would, in the opinion of the Company, interfere with the sufficiency of the gas to be supplied by means of that main for lighting or domestic purposes." This enabled the Company to cut-off existing industrial supplies. Some of the gas supplied to the Railway Company was used for purposes other than lighting and domestic use; but, under the promoters' clause, if the Railway Company were taking a supply from a main in a road in which a new block of houses was built, the Gas Company could say they would discontinue the supply because they could not go on supplying—"in their opinion," not in fact—without interfering with the sufficiency of the gas required for lighting and domestic purposes in the new houses.

At this point Mr. Swallow objected that Mr. Jones was dealing with the supply inside the area, and not outside. He pointed out that the motion passed in the House of Commons on July 5 stated that an opponent should only be heard on objection distinctly specified in the statement.

The CHAIRMAN said he also had noted that the objection was that the clause as to mains of insufficient capacity should not be operative in the case of any main used for giving a supply of gas in bulk outside the limits of supply of the Gas Company. Mr. Jones' remarks had referred entirely to questions arising inside the limits.

Mr. TYLDESLEY JONES held that the observations he was making were relevant to his case. Supposing the main from which he was being supplied to-day was going to be used by the Gas Company for giving a bulk supply outside their limits, and supposing the Gas Company obtained the clause without the limitation he asked for, they could say that they objected to continue to supply him because they could not do so without interfering with the sufficiency of the supply which they were giving by that main to consumers beyond their limits. Therefore, the proviso he asked for should be added to the clause. He asked the Committee to say that, if the Gas Company were to be authorized to supply in bulk outside their limits, they must not do so at the expense of industrial consumers within their limits of supply. This appeared to him to be an eminently reasonable proposition. Mr. Swallow had said that the clause which he had proposed appeared in the Model Bill. Of course, the Model Bill was rather a dangerous thing to deal with, unless they understood what it meant. It was a collection of precedents—a collection of clauses in the model form to be used in cases where the powers concerned were to be given. The Model Bill, however, did not enter into the question of whether or not the powers in these clauses were to be given. This was a matter for the Committee. This particular clause, dealing with mains of insufficient capacity, only came into existence since the war commenced. Under war conditions many gas undertakers, finding a difficulty in laying additional mains to meet the requirements of their consumers, had secured the insertion of the clause in their Acts; but whether or not it was to be allowed without qualification, was a matter for the Committee. Mr. Swallow had also said that he could not find a case in which this proviso had been inserted. As a matter of fact, it had been inserted in the Bromsgrove Gas Order, which was made this year. This was the first case.

Mr. SWALLOW pointed out that this particular Order had not yet come into operation.

Mr. TYLDESLEY JONES replied that this did not matter; the Order had been made by the Board of Trade. Again, in the Chesterfield Corporation Bill the modification he was now asking for had been inserted by agreement, in respect of their gas undertaking. It was only recently that the railway companies had realized the importance of this provision, and there were two most recent precedents. Mr. Swallow had seemed to think that, because the addition of the proviso was agreed upon, this was something against it. As a matter of fact, it was something higher than a decision of Parliament. The fact that two gas undertakings had agreed to it was evidence of its reasonableness. With regard to the proviso which he suggested to the other clause, which obliged the Gas Company to satisfy all demands within their own limits before supplying in bulk outside, he pointed out that the Gas Company had power to-day to contract with any local authority, company, or persons within their limits to supply in bulk, but they should not be allowed to supply outside authorities in bulk at the expense of consumers inside, who had nobody else to resort to for a supply of gas. The clause with a similar proviso had been inserted in the Lea Bridge Order, which had been confirmed by Parliament. It had also been inserted in the Bromsgrove Draft Order and the Burton-on-Trent Draft Order, by the Board of Trade; and it had been inserted in the Chesterfield Corporation Bill. In the case of the Burton on-Trent Order, there had been full argument; and after the tribunal had indicated its views, the promoters had given way. He would not lay any great stress on whether or not the thing was fought; the point was as to whether it was a reasonable provision. It must be reasonable if Corporations such as Chesterfield and Burton-on-Trent, a Company such as the Lea Bridge, and the Bromsgrove Urban District Council had agreed to it.

In reply to Mr. LOUGHER, Counsel said that, although a consumer within 25 yards of a main could demand a supply, if the Company had contracted to supply outside their limits that might result in the pressure dropping, and the consumers within the limits would not get a proper supply. It was not enough to say to the consumers that they could sue for penalties—they did not want penalties, they wanted gas. Parliament was now adopting modifications to protect the gas consumer. It was no answer to him for the Gas Company to say that he could legally demand a supply of gas, but they were sorry that they had not got it because they had made a contract with an adjoining authority to give a supply in bulk.

Dealing briefly with Mr. Swallow's six points, he said that the Railway Company had not taken it for granted that there was no obligation on the Gas Company to supply inside their limits. Again, with regard to the view that the proviso extended the Gas Company's obligations, Mr. Swallow had mentioned that the proviso was not confined to "legal and proper" demands. Of course it was. It had been said also that undertakings outside would not take a bulk supply if it were subject to the needs of the consumers inside being met. Obviously, the Gas Company ought only to be allowed to supply outside in the event of their having more gas than was required inside. As to the suggestion that the proviso which he asked should be added to the clause constituted a reflection upon the Gas Company, Mr. Jones pointed out that he had stood before Committees and had accepted that proviso, and had felt no reflection. If this was a reflection on the Barnsley Gas Company, then every restriction which Parliament imposed was a reflection upon those concerned. The Barnsley Company was extremely well conducted, but certainly not better than the Chesterfield undertaking. As to who was to decide whether or not the Gas Company were satisfying demands within the limits, Counsel said the Company need not fear in that direction. They could go on supplying outside, so long as they gave a sufficient supply inside.

Mr. SWALLOW, referring to the precedents given by Counsel, said the attention of the Committee had not been drawn to the fact that they were not all in the same form as the proviso now put forward.

Mr. JONES remarked that the substance was the same.

Mr. SWALLOW said that in the case of Burton-on-Trent the form was quite different. The words were:

> Provided that the Corporation shall not supply gas under any such contract beyond the limits of supply if and so long as such supply would interfere with the supply of gas within its limits.

The same words were included in the Bromsgrove Order.

Mr. JONES said that the words he had actually put forward were taken from the Chesterfield Bill, and that was the latest form. He could see no difference between the two forms, in substance.

Mr. SWALLOW said he resisted both forms entirely.

Asked by Col. DU PRE what proportion of the 2¼ million c.ft. which the Railway Company obtained from the Gas Company last year was used for industrial purposes, Mr. Jones said he had not the figure. It was probably small, and was used for raising steam in the engine sheds.

Col. DU PRE opined that the bulk of this gas would be used for lighting, and therefore the Railway Company could legally demand it under the clause as to mains of insufficient capacity.

Mr. JONES said it might be so in this case, but in other instances the Railway Company were using a large amount of gas for other purposes. They could not discriminate, because all the gas was taken through the same meter.

The CHAIRMAN said he understood the Gas Company were afraid of excessive demands for industrial purposes, which might prevent their entering into contracts to supply in bulk outside their limits.

Mr. SWALLOW replied that this was not so; the Company were bound to meet such demands inside their limits, and would be glad to do so. It was absolutely absurd to suggest that the power to supply in bulk outside should only be given provided that they did something which Parliament (fifty years ago) had said they should.

THE COMMITTEE'S DECISION.

The Committee then deliberated in private, and subsequently the Chairman announced that they had decided to allow the Gas Company's clause giving power to supply in bulk, with the addition of the words used in the Burton-on-Trent and Bromsgrove Orders, which precluded the Company supplying in bulk outside their limits if it would interfere with the supply inside. As to the clause relating to mains of insufficient capacity, the Committee had decided to add the words which the Railway Company had asked for.

LYTHAM ST. ANNE'S CORPORATION BILL.

The gas clauses of this Bill (which were dealt with in the issue of the "JOURNAL" for May 23, p. 490) were approved by the Local Legislation Committee of the House of Commons, presided over by Sir Thomas Robinson, on Wednesday of last week.

Mr. W. J. JEEVES, K.C. (for the Corporation), said that the Lytham district had had gas-works from 1847 onwards. The streets were first lighted with gas in 1850; and the works were owned by the Urban District Council. In St. Anne's the supply was provided previously by a Company; but in 1916 the Urban District Council applied for power to purchase the undertaking by agreement, and obtained that power for two years. They were unable to effect this, however, until 1921, when they came to terms with the Company. Their power having expired, they had to go to the Board of Trade (under the Gas Regulation Act) in order to have brought up-to-date the power which they had obtained in 1916. This they secured under a Gas Order in 1922. Under the Order, the Gas Company's undertaking in St. Anne's became vested in the Urban District Council from Dec. 31, 1921; and when the District Council was incorporated in the Borough of Lytham

St. Anne's, in 1922, the undertaking became vested in the Corporation. There was no maximum price at all in the case of Lytham; but at St. Anne's the maximum price was 16·4d. per therm, which was fixed by the Board of Trade in 1922, and was subject to revision under the Gas Regulation Act. The Corporation now proposed to make the maximum of 16·4d. per therm apply to the whole undertaking throughout the borough. It had been found that both the gas-works were up to their limit, and to some extent beyond their limit, so that it was essential that there should be an extension. Both stations were in very confined areas; neither was in a position convenient or good from the point of view of the amenities of the district; and one was in a very bad position as regards access for coal. The matter had been most carefully considered by Mr. J. H. Ranft (Gas Engineer to the Borough) and Mr. W. Doig Gibb; and their conclusion was that, if these extensions were carried out, the most economical way would be to provide a completely new station. If they did not do it now, it would have to be done shortly, because the space at the present works was so restricted. By getting a site which has (as the proposed new site) all facilities for water and for railway carriage and matters of that kind, and having regard to the benefits of the new plant, they would be able to manufacture gas at least a penny per therm cheaper than could be done on the existing works even if they were brought up-to-date. Therefore, the new works would be a real economy. The Bill proposed to take power to erect a new station on the confines of the borough, and to take the present works right away from the congested part of the area in which they were situated. The existing gasholders would still be used, and the gas transmitted from the new works by compressors into the gasholders. The cost would be comparatively small.

Mr. *J. H. Ranft* agreed with the remarks of Mr. Jeeves. The amount of gas made by the undertakings in Lytham and St. Anne's in 1903 was 97,294,000 c.ft. This figure had increased to 221 millions in 1923—an increase of 127 p.ct. The increase in St. Anne's was somewhat greater than in Lytham. The plant at the Lytham works had a maximum producing capacity of 500,000 c.ft. per 24 hours, with the exception of the washers, scrubbers, and meters, which latter would have to be added to in order to bring the real production capacity up to that figure. The retorts were vertical, and in good order. It was only fair to the undertaking to point out that the total capital expenditure amounted to something over £30,000, all of which had been paid off with the exception of £6000.

Mr. H. C. Honey (Director of Gas Administration at the Board of Trade), who attended the Committee, was asked by the Chairman if he had examined this scheme. He replied that he had not examined the engineering part of the scheme in detail; but so far as the general provisions of this part of the Bill were concerned, the Board of Trade were quite satisfied. He could not express an opinion as to the necessity for the new works; but if the Committee were satisfied that they were necessary, then the Board of Trade had nothing further to say upon the gas clauses.

The Chairman said that the necessity for the works would, of course, be decided by the demand for gas. If the present demand for gas was equal to the present output, that was one thing; if there were an increasing demand, they would have either to enlarge the present works or build new ones. The Committee had had evidence as to the demand, and this justified further plant. The Corporation did not propose to extend the existing works, but to build new ones. Would Mr. Honey say that the new station was necessary?

Mr. Honey replied that he would agree, on the evidence which the Committee had before them. He further stated that the Board of Trade had not done anything in regard to transferring the works to another site. This was a matter on which one could only form an opinion after hearing evidence; but as the parties concerned had not appeared before the Board of Trade, they had no means of coming to a conclusion.

Mr. *Ranft*, continuing his evidence, said that the Lytham site was very restricted, and there was practically no room for extension. The St. Anne's works had a maximum productive capacity of 300,000 c.ft. per 24 hours. The retort-house was of an obsolete type. As against this, the other parts of the works—the washers, exhausters, and purifiers—were sufficient for the purpose. The storage capacity at the Lytham works was 360,000 c.ft., and on the St. Anne's area there was storage capacity for 350,000 c.ft., making a total for the borough of 710,000 c.ft. The mains and services of both undertakings were in excellent order, and extended everywhere throughout the inhabited part of the borough. The combined productive capacity, after allowing sufficient space, was 680,000 c.ft. per 24 hours; and the maximum demand, at a certain period of the year, was in excess of the maximum capacity to the extent of 70,000 c.ft. per day. It was clear that additional plant would have to be provided somewhere; and, apart from inconveniences of site, it would not be economical to put modern retorts in place of the existing retorts at the St. Anne's works. The St. Anne's site offered little room for extension. It was not so good as the existing Lytham one, owing to the lack of facilities for getting coal to it. It was not possible to put a siding in. The proposed new site was 9 acres in extent, which would be ample to deal with the existing position and to provide for extensions. With new plant on the new land, they would be able to produce more cheaply than if they installed modern plant at the existing works, which by reason of their position were somewhat of a nuisance. The works proposed on the new site included a railway siding, complete with tipping arrangements, to hold three or four days' supply of coal; a horizontal retort-house, complete with coal and coke handling plant, stoking machine, &c. (the coal being mechanically handled from coal wagon to coke wagon), in which would be carbonized 90 tons of coal per day, or in which would be produced 1,000,000 c.ft. of gas per day, thus increasing the present capacity of the two existing works by one-third; and an auxiliary plant of a capacity of 1,500,000 c.ft. per day. Therefore, with a 15 p.ct. margin of safety, the capacity of the working plant would be 850,000 c.ft per day, as against the present highest demand of 750,000 c.ft. It was proposed to transmit the gas by compressors into the existing gasholders. It would pass, first, to the Lytham holders, and would be distributed thence over the Lytham district, then passed through a separate main to St. Anne's, and distributed through the present system there. With regard to cost, his estimates were as follows:

For construction of retort-house, coal-store, exhauster-houses, washing-plant houses, purifier-houses, boiler-houses, meter and governor houses, booster-houses, chimneys, boundary wall, and buildings for chemical work, store rooms, workshops, offices, &c.	£20,138
Retort-house plant	£33,650
Construction of new gasholders and tanks	£30,945
Construction of other gas-works plant	£30,002
Works of paving and draining	£1,896
Construction of gas-mains	£13,467
	£130,098

The capacity of the new gasholders would be 1½ million c.ft.; so that, with the addition of the existing gasholder capacity of 700,000 c.ft., the total would be something like 2 millions, or in the neighbourhood of three days' supply at the present maximum. The total amount borrowed for constructing works was £122,313, of which £33,746 had been repaid, leaving a balance of £88,567. There was a reserve fund which stood at £10,000 for the year ended March 31 last, and there was a working balance of £5889.

Mr. Honey observed that he thought the erection of new works was the best thing the Corporation could do, both from the point of view of economy in working and of the advantage to be gained by moving the works from a congested part of the town.

Mr. A. Hopkinson (a member of the Committee) asked, as it was intended to transmit from the new station to the gasholders at Lytham under pressure, to distribute in Lytham from those holders, then to boost again and transmit under pressure to St. Anne's, if witness anticipated having to use an exceptionally high pressure for transmission from the existing Lytham station to the present St. Anne's station.

Mr. *Ranft* replied that the pressure would be quite low. The transmission main would not be used for service at all.

Mr. Hopkinson also asked whether it would be possible to increase the generating capacity of the St. Anne's station by discarding the horizontal retorts there and putting in verticals.

Mr. *Ranft* did not think so.

In reply to Sir E. Hiley (a member of the Committee), witness said that there would be accommodation for six or seven weeks' coal storage on the new site, as well as siding accommodation for three days' supply. Asked whether the site would be large enough to last for any length of time, he said this depended on the growth of the district; but, assuming its present rate, at compound interest, he would say that the site would last at least another 40 or 50 years.

Asked by the Chairman why horizontal retorts were to be put in the new house, witness said it was found that they could produce gas at a cheaper cost per therm from horizontal retorts than from verticals.

The Chairman said this was very interesting, especially in that room. The Committee heard so many things that sometimes they did not know where they were.

Mr. Hopkinson asked on what witness's opinion was based.

Mr. *Ranft* replied that it was based on the facilities on this particular site, and on the experience of a considerable number of other undertakings. He had taken into account the opposite experience of some other undertakings. He agreed with the Chairman that they could use any kind of coal with horizontal retorts, but were limited with verticals.

Mr. *W. Doig Gibb, O.B.E.* (Past-President of the Institution of Gas Engineers, and late Chief Engineer to the South Metropolitan Gas Company), expressed agreement with all that Mr. Ranft had said. Asked why he would suggest that it was desirable to have the one complete site in this case, he stated that the existing two, even if they contained modern plant, never could give such economical results as one concentrated works in a place of this size. By going to the new site they got away from the sea front, so that there was no chance of creating a nuisance. They had an ideal piece of land from the gas-works point of view. Mr. Ranft and himself were quite convinced that, even allowing for the charges upon the extra expenditure, they would be able to produce cheaper gas per therm with the complete new works than they could possibly hope to do by carrying on the existing ones. He had been able to verify the estimates to some extent by actual tenders. Tenders were already in for a considerable amount of the work, and the prices were such that there was every reason to believe that the estimates would be just about as exact as it was possible for them to be. He had good foundation for the hope that the actual cost would not exceed the estimates, contrary to common experience.

Mr. Honey said he would be interested to know why it was proposed to put up so large a new gasholder as to give a total capacity in the whole area of three days' storage.

Mr. *Doig Gibb* said that the new gasholder would probably not be erected for five or six years from now. It would not be put up at the same time as the new gas-works proper, but it was anticipated that there would be a rise in the consumption which would necessitate the erection of the holder in about five years' time. In reply to further questions, he said they were only providing for a comparatively small margin in the manufacturing plant. The purely manufacturing plant would produce 850,000 c.ft. per day, and the subsidiary plant, scrubbers, &c., 1,500,000. With regard to the other plant, it would be foolish to erect it in penny numbers. To be economical, it had to be put up in advance of what they actually required, and this was the reason why the gasholder was to be so large.

Mr. Hopkinson asked if witness had considered, in cases such as this, where the municipality was supplying gas as well as electricity, whether the site ought not to be chosen in some relation to the possibilities of extension of the electricity supply. Was it not desirable that both gas and electricity supply should be taken into consideration as a whole in selecting the site of the gas-works?

Witness replied that, in his opinion, gas and electricity works should be side by side; but in this case that could not be, because there was no land whatever available near the electricity works.

The Committee approved of the construction of the new works.

Mr. Jeeves, referring to the penny per therm saving which would be

effected, said that this would amount to over £4000 per annum. With regard to borrowing powers, it was sought to borrow, for the erection of new gas-works, £116,631, and £13,467 for new gas-mains and extensions of mains; the periods of repayment to be 40 and 30 years respectively. The Minister of Health had commented upon the periods of repayment, and had suggested that the period in respect of the first amount should be reduced. Apparently it was suggested that there should be an equated period of between 20 and 30 years. He submitted that this was not a case of the addition of a building to an existing works, or an additional retort or additional plant, which was the kind of thing with which, mainly, the Minister was called upon to deal. Seeing that the Corporation in this case were proposing to build a complete new works, the effect of which would be a saving in cost of manufacture, on existing output, of £4000 a year, it was not unreasonable to ask the Committee to regard this as an undertaking which was going to endure for a long period of time.

The CHAIRMAN pointed out that the proposal to erect new works would make a large proportion of plant at the St. Anne's works obsolete. It would be a replacement strictly; and he did not think the Committee would be prepared to give too long a period.

After further discussion, the Committee decided that the 40 years should be reduced to 30 for the repayment of the £116,631, and that the 30 years should remain in the case of the £13,467.

Mr. JEEVES, speaking with regard to the maximum price of 16·4d. per therm, said the Board of Trade saw no objection to its adoption in respect of the whole undertaking of the Corporation. The provision made in the Bill for the revision of the maximum price was similar to that at present applicable to the price fixed by the 1922 Order.

The CHAIRMAN, dealing with the calorific value, asked why the declared calorific value was to be 500 B.Th.U. in St. Anne's and 430 B.Th.U. at Lytham.

Mr. JEEVES replied that they could not equalize that until they got the new works; the figures followed out what they were doing at present. Asked what was the price of gas, Counsel said that in Lytham to-day it was 3s. 8d. per 1000 c.ft., less 4d. discount; in St. Anne's it was 10·8d. per therm, less 4d. per 1000 c.ft. discount. If they carried out their full repairs at the existing works, the cost would make the price of gas about 1s. per therm.

There is in the Bill a clause providing that when money is deposited by any person by way of security with the Corporation for the payment to them of moneys which may become due in respect of the supply of gas, &c., the Corporation shall pay interest at 3 p.ct. per annum on every 10s. deposited for each six months during which the moneys remain in their hands. The Board of Trade, said Mr. JEEVES, suggested that the rate of interest should be increased to 4 p.ct. The clause, as in the Bill, followed the Company's Gas Act of 1898, and the Corporation saw no reason for the increase to 4 p.ct.

The CHAIRMAN said he did not think this was a big matter; and the clause was passed.

New clauses have been inserted in the Bill with regard to the revenue and expenses of the gas and other undertakings. It is provided that all moneys received by the Corporation in respect of the gas undertaking shall be carried to and shall form part of the Borough Fund, and all payments and expenses made and incurred in respect of the undertaking shall be paid out of that fund. Separate accounts are to be kept by certain undertakings, including the gas undertaking, and a clause details items which are to be shown on the expenditure side of those accounts.

Aberfeldy Gas Price Reduced.—The Aberfeldy Gas Company have reduced their charge for gas from 9s. 2d. to 8s. 4d. per 1000 c.ft.; this being the second reduction of 10d. made within a period of little over a year.

Cardenden Gas Company.—The balance-sheet for the year ended May 31 was submitted at the recent ordinary general meeting of the Company, and was regarded by those present as being very satisfactory. The profit amounted to £1254, and the payment of a dividend at the rate of 6 p.ct. (free of income-tax) was agreed to.

Buxton Gas-Works Results.—The Buxton gas undertaking shows a profit of £7492 on the past year's working. The Town Council have decided to place the sum to a reserve fund. Councillor Hall asked whether, in view of the success of the undertaking, there would be any further reduction in the price of gas. The Mayor (Alderman A. W. Wall) said that the matter was under consideration. It has been resolved that the amount carried to reserve shall not make this fund exceed 10 p.ct. of the total capital of the undertaking.

Tavistock Lighting Charges.—A discussion arose at a meeting of Tavistock Urban Council—Mr. W. B. Alger presiding—regarding a resolution by Mr. Gill in reference to the charges for gas and electric light in the town, with a view to their being reduced. Mr. Gill claimed that the prices were too high at Tavistock—they had been reduced in other towns. Mr. Stapleton said the Gas Company found, in comparison with neighbouring places, that their own charges were favourable. Mr. Gill's motion urging a reduction was agreed to.

Public Lighting of Knighton.—Tenders for the lighting of the streets from Aug. 24 to the middle of April next were presented to the Knighton Urban Council last week. The tenders were from the Gas Company (holders of the present contract) and the Electric Light Company. The former tendered at 42s. and 36s. per lamp, according to the times of lighting. This worked-out at £147 and £126 for the lighting period respectively. The Electric Light Company tendered for the whole period for the sum of £125. The latter tender was accepted.

Annual Report at Swadlincote.—Mr. E. W. Goodhead, Chairman of the Water and Lighting Committee of the Swadlincote District Urban District Council, in presenting the annual report, expressed great satisfaction at the results achieved on the past year's working of the Gas Department, which had resulted in a net profit of £1795, as against a loss of £5090 on the previous year. The Chairman said that the results reflected great credit on the Engineer and Manager, Mr. E. W. Wilson, who had made a derelict works into one of the most up-to-date in the country, for its size. The gas made per ton of coal was 17,046 c.ft. He announced that a reduction of 6d. per 1000 c.ft. had been made as from July 1.

MISCELLANEOUS NEWS.

GAS REGULATION ACT APPLICATIONS.

The following further notices have appeared in the "London Gazette" with regard to applications to the Board of Trade for Orders under the Gas Regulation Act.

Bourne Urban District Council.

The maximum price now authorized in respect of the supply of gas by the undertakers is 5s. 6d. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 16·8d. per therm.

It is also proposed that an additional charge of 1·6d. per therm should be authorized in respect of gas supplied through a prepayment meter.

Llanidloes Gas, Coal, and Coke Company, Ltd.

The maximum price now authorized in respect of the supply of gas by the undertakers is 5s. 5d. per 1000 c.ft.; and the price they have asked the Board of Trade to substitute for this is 2s. 1d. per therm.

DECLARATIONS OF CALORIFIC POWER.

Beccles Water and Gas Company.—500 B.Th.U. (Oct. 1.)
Bridgend Gas Company.—425 B.Th.U. (Sept. 1.)
Chesterfield Corporation.—480 B.Th.U. (Oct. 1.)
Fareham Gas and Coke Company.—450 B.Th.U. (Oct. 8.)
Yeovil Corporation.—480 B.Th.U., in substitution for 450 B.Th.U. (Oct. 1.)

SATISFACTORY PROFIT AT BIRKENHEAD.

It was announced by Mr. Luke Lees (the Chairman of the Gas Committee) at the last monthly meeting of the Birkenhead Borough Council that, in spite of the reduction in the price of gas by 1s. per 1000 c.ft., the Committee in the twelve months ended March 31 had paid off the deficit of £35,000, and had a balance in hand of £17,000, making a total of £52,000. This, he considered, was a satisfactory solution of the difficulty with which the undertaking had been faced; and he wished to congratulate the staff, from the Manager (Mr. H. E. Stone) down, for such excellent results. He also pointed out that the alterations at the works would bring about the actual completion of the scheme. The cost of this work, according to the Gas Engineer's estimate in 1920, was £56,380; but the present estimated cost was £31,313—a saving of £25,000 by holding back the work until the present.

The tenders accepted were: Messrs. W. C. Holmes & Co., Ltd., Huddersfield, for the supply, delivery, and erection of wet purification plant and connections; the Whessoe Foundry and Engineering Company, Ltd., Darlington, for the supply, delivery, and erection of four coal-gas purifiers, with valves and connections; and Mr. Joseph Davies, Birkenhead, for the alteration of, and additions to, the old retort-house for use as a purifier house.

PLYMOUTH GAS COMPANY'S SERVICE DEPARTMENT.

The Plymouth and Stonehouse Gas Company, realizing that the sale of a finished product is of equal importance to its manufacture, employ in their distribution department almost as large a staff and as many workmen as on the manufacturing side.

The distribution and sales branch of the Company—or, as it is now regarded, the Service Department—is almost equally divided between the central depôt at the works and the showrooms in George Street.

At the former are stored an ample supply of gas cookers, fires, wash boilers, grillers, boiling-burners, water-heaters, and other apparatus for lightening labour in the houses of the consumers. Meters are tested there, appliances overhauled and repaired, and old-fashioned and dangerous water-slide pendants converted (free of charge to consumers) into a safe design.

The showrooms, conveniently situated in the centre of the town, stock samples of every type of labour-saving gas apparatus; and a staff of capable assistants is ever ready to demonstrate the various uses to which these can be put. Complaints received from consumers of defective supply or apparatus are transmitted by the Company's private wire to the distribution department at Coxside, where they are promptly dealt with. The private fittings department, which has now reached unprecedented dimensions, has recently been re-organized on the most up-to-date lines, so that consumers' orders may receive skilled attention without delay. A thoroughly efficient and well-trained staff is at the service of consumers, to give advice free of charge as to the most economical apparatus to adopt, in the varied circumstances existing in Plymouth.

Owing to the large number of tenemented houses, any form of solid fuel, whether smokeless or otherwise, is in most cases prohibitive because of lack of storage, quite apart from the additional labour and dirt entailed in handling it. The consequence is that the Company are supplying gas in their area to no fewer than 26,000 cookers and 9000 fires, in addition to a large number of hot-water circulators, geysers, washers, irons, and engines.

Any success the Plymouth Gas Company may have achieved is no doubt largely due to the conviction held by every member of the Board of Directors, the staff, and the workmen, that the business in which they are engaged is serving a real and pressing public need.

Dublin Gas Charges.—In connection with the Free State Government inquiry in regard to gas charges in the Dublin area, the Dublin Corporation have called a conference of local authorities. At the Dalkey Urban District Council meeting, the letter of invitation was marked "read."

LIVERPOOL LIGHTING ENGINEER'S REPORT.

Reporting on the work of his department for the fifteen months ended March 31 last, Mr. H. Dickinson, M.Inst.C.E., the Liverpool City Lighting Engineer, says that at the date named the total length of roads equipped for lighting, irrespective of courts and passages, amounted to 521¼ miles—18¼ miles (exclusive of Knotty Ash Hutments) being by electricity, 498⅜ miles by incandescent gas, and 4⅜ miles by oil—a net increase of 11 miles. The actual number of lamps of all types lighted on March 31 was: Gas and oil, 19,262; electric, 1786—total 21,048. The figures on Jan. 1, 1922, were: Gas and oil, 18,542; electric, 1484—total 20,026. The work of converting gas-burners from the upright to the inverted type has been continued, and approximately 13,000 have now been dealt with. The lighting, reducing, and extinguishing of the gas-lamps is carried out by two methods—by automatic controllers and by hand. The automatic lamps are dealt with by clockwork controllers, and are supervised by 72 attendants. The hand-lighted lamps are situated in districts lying near the centre of the city, and are attended to by 70 lamplighters. All these men are in the charge of foremen, and muster at police stations, where they are in telephonic communication with the inspectors, who visit different mustering stations each night at lighting time.

Gas-Meter Testing.

The following statement shows the number of meters tested, and the fees charged:

Senders.	Dry Meters.		Wet Meters.		Prepayment Meters.		Total.	Fees.
	Approved.	Rejected.	Approved.	Rejected.	Approved.	Rejected.		£ s. d.
Liverpool Gas Company .	911	69	13,221	392	1,589	98	16,280	902 8 9
Meter manufacturers. . .	4,762	314	17	7	11,186	623	16,909	1,071 15 9
Local authorities . . .	3	40	595	8	327	30	1,003	61 5 9
Sundries . .	126	397	46	55	3,041	89	3,754	205 11 3
Totals . .	5,802	820	13,879	462	16,143	840	37,946	£2,241 1 6

Testing Consumers' Gas Pipes and Fittings.

Owing to the large number of cases of gas poisoning, not only in this city but throughout the country, it was thought desirable to call the attention of consumers to the facilities afforded by the department for the testing for soundness of their gas-pipes and fittings. An advertisement was, therefore, inserted in the Local Press notifying the public that a test would be made upon payment of a fee of 5s. The immediate response was quite satisfactory; but latterly the applications have been very few. The usefulness of the test, however, was demonstrated by the results, which showed that out of 92 applications received, the pipes and fittings in 71 cases (or 77 p.ct.) were unsound.

Expenditure.

The gross expenditure of the department for the fifteen months amounted to £135,793; and a revenue of £10,476 was derived, principally from work performed for, and materials supplied to, other departments and bodies, making the net expenditure on public lighting £125,317.

DEVOTION TO DUTY RECOGNIZED.

Awards to Gas Light and Coke Company's Employees.

There was a pleasing little ceremony in connection with the Gas Light and Coke Company, on Monday, the 11th inst., when the Governor (Mr. D. Milne Watson) presented medals and gratuities awarded by the Directors both in respect of the accident to one of the boilers of the oil-gas plant at Kensal Green, on Nov. 29 last, and of the explosion which took place on Dec. 14 in connection with a new turbo-exhauster at Beckton.

Before making the presentations, the Governor stated that at Kensal Green, F. J. Hall and T. A. Stevenson, boilermen, with great presence of mind, shut-down the boiler stop valve, thus putting an end to the escape of steam and water, and that T. Hewitt, fireman, showed great devotion to duty by remaining at his post throughout, under very trying circumstances. So far as the Beckton explosion was concerned, unfortunately Messrs. Birks and Wallington, who personally directed the shutting-down of the whole of the plant, and to whom the Directors had awarded the Company's medal, were both unable to be present that day. The Directors had awarded the Company's medal and gratuity to E. Davies and J. Jones, for shutting-down the engines when the gas fired in the building; to C. H. Gray, for shutting-down the exhauster-engine; to E. Downes, who ran from the pump-room level and shut-down the twin exhauster, and remained rendering assistance until sent away; to R. F. Cornwell, who returned to the exhauster-house to close-down the gas-valves; and to A. W. Polley, who went up in the lift to extinguish the lights in the turbine-room. The second explosion occurred before he could finish his task. He came down, but returned to shut-off an engine which was ablaze, and carried on until sent home. The Company had awarded gratuities to F. W. Leonard and A. Brown, the valvemen, for so promptly isolating the plant on the outlet side. Accidents, he was glad to say, seldom occurred; but when they did happen, the Directors were pleased to think that they had so many men in their employment with cool heads, who were equal to dealing with serious emergencies.

BRITISH COMMERCIAL GAS ASSOCIATION.

Report of the Executive Committee presented to the General Committee on Monday, July 9, 1923.

National and District Publicity.

With a view to increasing the effect of the advertising, the Executive have arranged (1) that the contracts be placed with all the newspapers for standard spaces of 8-in. double column, and (2) that specially prepared copy and illustrations, with standard type-setting and lay-out, be used throughout.

A scheme as outlined above will ensure that the advertisements will make the maximum appeal and will be most readily recognized by the public, first by reason of the widespread circulation of the media selected, and secondly by the frequent appearance of advertisements similar in size, good appearance, and appeal.

The Executive strongly recommend that individual undertakings should insert similar and simultaneous advertisements—the copy and blocks for which can be supplied by the Association—in their local newspapers. Members would thus definitely link up their local with the national and district advertising, and so increase the force of both.

Service to Members.

The demands made upon the Association for free service to individual members continue to increase; and the policy at headquarters, as far as possible, has been framed to satisfy this demand. While the success of this policy is to some extent reflected in the increase in the sales account for the last financial year, when the volume of orders handled showed an increase of approximately 100 p.ct. over the previous year, nevertheless the giving of individual free service is a charge on the Association's income which would otherwise be expended on national publicity.

The Executive suggest that the present is an opportune moment for the consideration and discussion of this matter by the General Committee, in order that a definite policy may be approved and adopted.

Gas Charges and Differential Rates Questionnaire.

Replies to the questionnaire issued by the Association on this subject have been received from 78 undertakings; and the information is being printed in report form. This report will be completed shortly; and the Executive recommend that copies be available to members at a charge of 10s. 6d. each, and that it form one of the subjects for discussion at the next meeting of the General Committee.

British Empire Exhibition, 1924.

Following the meeting of representatives of the various organizations representing the industry, a Committee has been formed and entrusted with the task of preparing a plan and scheme for an exhibit worthy of the industry at the exhibition.

National Gas Exhibition, Birmingham.

The Association is working in close touch with the organizers of this exhibition; and headquarters are being consulted and are giving assistance upon various matters. Space has been taken for the purpose of bringing all sections of the work of the Association before both the gas industry and the public.

Salesmen's Circles.

General approval has been expressed with regard to the formation and work of the salesmen's circles in the various districts organized last autumn. To meet the prevailing difficulty in some areas with regard to travelling, additional circles have recently been arranged with Aldershot, Edinburgh, and Portsmouth as centres. Arrangements are in hand for adding to these circles in good time for the next winter season.

The Executive recommend that a general meeting of the salesmen from all districts be arranged at the National Gas Exhibition, Birmingham. This meeting would fulfil the useful dual purpose of enabling the salesmen to meet together for the discussion of mutually interesting subjects, and to visit the gas exhibition. The Executive trust that the chief executive officers of gas undertakings will provide the necessary facilities for members of their staffs to attend this meeting.

Film Publicity.

The gas-cooking film entitled "Fifteen Minutes," originally produced by and for the Dublin Gas Company, and since distributed by the Association, has been well received by members and the public before whom it has been shown. Instructions have been received and arrangements made to show the film in over fifty cinemas (representing a public of approximately half-a-million). It is hoped to arrange for the production of further films dealing with other domestic uses of gas.

Commercial Organization Service.

The service provided by the Association in connection with commercial organization continues to be in steady demand; and the job-voucher system, which is an important feature of the service, is now working satisfactorily in 22 undertakings. Enquiries for the service have recently been received from subscribers in Australia and New Zealand. The Stockholm Gas Company, who are now members of the Association, are also subscribers to this section.

During the past few months the section have been devoting careful attention to the question of showroom planning and equipment; and assistance has been given to several undertakings in this particular direction. The Association were entrusted with the planning, equipment, and scheme of decoration for the new showrooms for the Woking Gas Company, who have expressed their appreciation of the service given.

Realizing the desirability of personal inquiry into the work of the section, members are invited to visit headquarters, where full information with regard to the service provided is available.

Arrangements are in hand for making a special display of the Commercial Organization Service at the Association's stand at the National Gas Exhibition, Birmingham, from which it is confidently anticipated that new subscribers to the service will result.

EUROPEAN GAS COMPANY, LTD.

The Annual Meeting of the Company was held on Tuesday of last week in the handsome and commodious new London Offices, Montague House, Devonshire Square, E.C.—Mr. H. E. JONES in the chair.

The GENERAL MANAGER AND SECRETARY (Mr. F. Eliot Williams) read the notice convening the meeting and the statement of accounts. The Directors' report was taken as read.

HONOURING THE DEAD.

The CHAIRMAN remarked that they were meeting for the first time in the Company's new house, which he thought would greatly commend itself to all those who considered the comfort of the staff and the fact that the work was growing. An increasing staff was necessary to cope with the business—especially in these times, when the work was so much increased by the need for readjusting contracts with the various municipalities. In drawing attention to the new surroundings, he would ask the shareholders first of all to rise and look at the memorial tablet on the wall of the room in which they were assembled. This was a copy of a memorial which was placed in every one of their works. It commemorated the brave fellows who lost their lives during the war, in the defence of their country—which for the purposes of that day's business was the shareholders' country also. It was simple and chaste in design, and executed in bronze and marble. He himself had only a few months back seen it exhibited at the various stations.

JUST TREATMENT OF THE COMPANY RECOGNIZED.

Now, the proprietors had the right to ask the Directors why their shares stood to-day at about £8 10s., instead of, as they did years ago, £18; and the Board had the opportunity of explaining to them that necessarily, until the state of affairs in the Ruhr became more normal, and until some other things were settled in connection with their own concessions, they could not expect to return to pre-war share values and to their former dividend. They were now in the position that, while they were buying things in this country to send across to France—coal especially—at 20s. to the pound, they were collecting their income at the rate of 6s. 8d. in the pound, because this was about the ratio of the franc to-day to what it was pre-war. The report told them last year that the Company had settled the concessions in Amiens, Boulogne, and Caen; and the year before they had settled that in Rouen. They had also practically settled working conditions at Havre; and he might tell them that the authorities were eminently fair and just in their treatment of the Company. At Nantes they had reached a *modus vivendi* which was more or less satisfactory. They had not left them like so many English companies, who, while they were providing the sinews of war, were limited to 3 p.ct. dividend. Their Company were saved from this. It was true that they did lose their dividend one year; but this was only while negotiations were in progress for putting things straight. He was sure the proprietors would quite understand that, until the franc became standardized, they could not expect to do so well as before. That morning he believed the franc was at 78·50 to the pound. When the Directors visited the stations last year it was 63; and in the spring of this year it stood at 70, from which it had gone steadily to the present figure. He thought he would have the authority of the General Manager for informing them that every franc by which the standard was debased meant, over the whole year round, a loss to the Company of £1500, with the franc at its present value. In the case of all their towns now except Nantes they had a definite sliding-scale which to a certain extent corrected this loss.

WORKING RESULTS.

With regard to the working of the Company, he might say that they had eight stations. They had latterly taken on another one at Wimereux; and they had just recently made a contract with the Commune of Wimille, a little township between Boulogne and Wimereux. Thus for the preparation of the accounts now before them it had been necessary for no less than eight different balance-sheets to be got out. Owing, however, to the wise policy of two persons to whom the Company were so greatly indebted—Mr. Williams, sen., and Mr. Backler—the *modus* of direction was very much assisted indeed by the capital forms of returns which came before the Board once a month at least. They there had a means of comparing the working of each station with that of every other station, and of comparing the present general working with the past. These returns, therefore, as must be the case with every company who followed the same practice, furnished the Directors with very complete control. Though there were differences between one station and another, the general working of the Company was extremely good, and would bear comparison with the works in this country which had not been disturbed as those in France had been by the war. The leakage appeared to have somewhat increased; but if they bore in mind that, in the case of Amiens at any rate, and to some extent at other places, bombs had actually been dropped from the heavens on to the streets in which the mains were laid, and when they also remembered that the development of heavy motor traction subjected the pavements (which were slighter than those in this country) to great vibration, this extra leakage was not to be wondered at. He thought that for some time to come the putting of all these mains in proper order would occupy the attention of their administrators. This leakage had been slowly going up for some period. With regard to the works themselves, they began before the war to instal the best gazogene furnaces—as they were called in France—the best furnaces for combustion of fuel; and these had enabled the Company during the war to produce an amount of coke which was quite unrivalled by French undertakings who had not adopted the same method. These and other improvements had been going on steadily; and although the Directors did not propose to offer the shareholders a larger dividend, he could give them the assurance that this dividend was not declared until the whole of the works had not only been maintained in respect of current repairs, but a great deal of the dilapidation of the years of the war (when it was impossible to secure material) had been made good. The Company's works to-day—the retorts, retort-houses, purifiers, and gasholders—were quite up to date; and although the Company's interest in these works was confined mostly to the period for which the concession ran—roughly about twenty-five years—it was a good thing to put those works in order, because the experience of other foreign companies had been that, when they allowed their works to suffer in order to save money (as was too often done by English companies in times of pressure), at the termination of the contract the municipalities declined to take the works at all, and built others for themselves.

THE COMPANY'S ASSETS.

He wanted to dwell upon this point, because it was an important asset to the Company that their works to-day would not be outrivalled by any modern works anywhere in Europe—and he said this conscientiously and deliberately. They had been doing a great deal of work to gasholders, &c., which could only be dealt with once in thirty or forty years; and they were now in a first-class state or were rapidly being placed in such a condition. With reference to the assets of the Company shown in the balance-sheet, years ago they boasted of £492,000 to £500,000 of invested securities. Some of these securities were depreciated terribly through the war. But to-day, beyond the invested securities, they had a fleet of steamers—a carrying power for coals independent of outsiders—which represented at least £250,000. They had written them down considerably; but this fleet represented an additional asset. He dwelt upon this because it was not an ordinary asset of a gas company. It was a prudent and most valuable asset; but as a rule it did not appear in a gas company's accounts. Though they had not now the £500,000 in securities, they had it in cash, securities, and ships. Now he thought he had been nearly through what it was necessary to tell the shareholders. They saw that the Directors proposed the payment of a dividend of 5 p.ct. free of income-tax—which, of course, at the high rate charged in England meant a considerable addition. They had still one of their stations to settle about, and that was Nantes; but such was the just and equitable disposition displayed towards the Company by the authorities—especially by the higher officials—that the Directors had little or no doubt they would be able to arrange this last of their concessions on a proper and satisfactory footing, like the rest of them.

THE WORK OF THE STAFF.

In coming to this new house, the Company had secured a great economy. The rent at Finsbury House—where accommodation was very limited and very uncomfortable—was a high one; and beyond this they were threatened with an increase of something like 100 p.ct. The Board therefore thought it well to put themselves out of reach of such a contingency in the future, by securing a freehold. With the assistance of Mr. Williams and the staff, they obtained this quiet position, where there was little traffic, though they were in the heart of the City. They had, he felt sure, made a very good bargain. The ground floor was given up to the book-keeping department, the first floor to managerial offices, and the floor above that provided accommodation for the caretaker. In conclusion, he would like to say that the accounts now presented and the dividend recommended had not been attained without a very great deal of hard work. The staff was necessarily larger; but the shareholders could have no idea, unless they visited the Board-room, what it meant to have to re-settle conditions under a sliding-scale that would provide for all alterations, which were continually altering again. It had thrown an enormous amount of extra duty upon the staff, to which later he would make further reference. There was a great quantity of work which was very responsible and very onerous to carry out. This fell upon the Directors, the General Manager, and the staff here, and above all on their local representatives in France, who were most painstaking and conscientious in the service of the Company. He moved that the report of the Directors and the statement of accounts for the year ended March 31 last be received and adopted.

The DEPUTY-CHAIRMAN (Dr. Charles Carpenter) seconded the resolution, which was at once unanimously carried.

THE DIVIDEND.

It was next resolved, on the proposition of the CHAIRMAN, seconded by the DEPUTY-CHAIRMAN: "That the interim dividend of 5s. per share paid on Feb. 1 last, less 4d. per share for duty in respect of all shares held in France, is hereby confirmed. That a final dividend for the year ended March 31 last at the rate of 5s. per share be now declared—such final dividend on all the shares of the Company to be paid on Aug. 1 next, the whole out of interest and profits and free of income-tax, subject, however, to a deduction for French stamp and transfer duty of 4d. per share in respect of all shares held in France."

RE-ELECTIONS.

The CHAIRMAN said it was now his pleasing duty to ask the shareholders to re-elect two of his colleagues on the Board—Mr. W. G. Bradshaw and Mr. John Mews. They were both most helpful as Directors. Mr. Bradshaw had a great name in the banking world, though he believed that this was not the best of his qualities from the point of view that the Directors took. They liked to have on the Board a man who knew something about gas; and short of being a technical gas engineer, Mr. Bradshaw's long and careful attention to gas matters over a great number of years had given him such knowledge that what he did not now know about gas was not much worth knowing. Mr. Mews had also served a very long apprenticeship on the Board of what he (the Chairman) regarded as the most important gas company in the world; and he brought to bear upon their deliberations a good deal of legal acumen.

The DEPUTY-CHAIRMAN seconded the motion, which was agreed to.

Thereafter the Auditors (Messrs. G. C. Goldsmid and W. B. Brady) were re-appointed, on the proposition of Mr. A. M. PADDON, seconded by Mr. A. J. MCEWAN.

THE PENSION SCHEME MODIFIED.

The CHAIRMAN remarked that the shareholders had received a circular which explained that a modification of the pension scheme was necessitated by the fact that the existing limit of 500 frs. per head was based upon the rates of pay ruling in 1911. Since the war, salaries and wages had doubled and even trebled in France, with the result that the Directors thought the restrictive clause should be deleted from the scheme, in order that the Company's pension contribution might

remain in the same proportion as before to salary or wages received. What was a generous provision at the time it was originally made, was, of course, under the altered circumstances, no longer so. He therefore moved: "That the scheme for providing pensions for the Company's employees and workmen in France approved at an extraordinary general meeting of the shareholders on Oct. 17, 1911, be, and is hereby, modified by the deletion of the clause limiting the Company's contribution to 500 frs. per head in any one year; and that the maximum may be determined from time to time at the discretion of the Directors."

Mr. A. M. PADDON seconded this, and it was agreed to without discussion.

VOTES OF THANKS.

Mr. PADDON said he wished to move a very hearty vote of thanks to the Directors, because he felt that, although there was not a large attendance, every proprietor would desire it to be proposed, just as he would be sure that it would be carried. They must all have realized, in listening to the Chairman, how very dependent the proprietors were, in the special circumstances of this undertaking, upon the skill and experience of the Directors. There was neither an inexperienced nor an unskilled member on their Board. Without the close application of this experience and skill to the Company's affairs, it would have been impossible to produce the results which had been placed before them that day. The Chairman had referred almost apologetically to the fact that they were only to get 5 p.ct. free of income-tax; but, speaking with a fair knowledge of the circumstances of gas undertakings both in this country and on the Continent, it seemed to him the wonder was that they were getting any dividend at all. Taking all things into consideration, the proprietors were very fortunate indeed.

Mr. MCEWAN seconded the vote, which was heartily accorded.

The CHAIRMAN acknowledged the vote, and the graceful and flattering terms in which it had been proposed. Of course, he said, it was satisfactory at the end of a year to get the thanks of the shareholders, and it naturally led to a resolution which he himself had been going to move—namely, that the best thanks of the meeting be given to the whole of the staff of the Company in London and abroad for their services during the past year. He had referred already to the strain thrown upon the staff by the changed conditions brought about by the war. Had it not been possible to find a *modus vivendi* with the authorities, they could not have paid a dividend at all. He had remarked upon the extraordinarily equitable manner in which the authorities had met them. It had been necessary to satisfy the authorities on all points; and this had entailed a great deal of work on all concerned. In this connection, he specially desired to mention their young General Manager, Mr. Williams, who had only been with them two or three years, but was displaying great industry and ability in following a great authority in gas matters. The staff loyally backed him up. The report made special reference to the efforts made to extend the use of gas. A plan had been got out in the office, in which Mr. Williams took great personal interest; and this was having good results. In providing showrooms, they were careful to select good business positions, with an attractive frontage; and these were having an admirable effect in assisting sales. He particularly wished to refer to the efforts of the local administrators. Wisely and properly, in accordance with the traditions of the Company, they were all Frenchmen; and he hoped this would always remain the case. Some of the younger ones came over here and, by the courtesy of friends connected with different companies, spent some time studying English methods, and preparing themselves for their work abroad. The Managers were very capable and very worthy men; and they would be glad to hear that the shareholders recognized their abilities.

The DEPUTY-CHAIRMAN said it was a pleasure to second the vote of thanks. No doubt, he was in the habit of judging these gentlemen by a rather high standard; and it was a great delight to him, whenever he came in contact with them, either in London or abroad, to find that they justified the complete confidence which the Board placed in them.

Mr. ELIOT WILLIAMS, after the vote had been unanimously accorded, returned thanks. He said he would like to emphasize one point which perhaps the shareholders did not fully realize—the very difficult combination of work that their managers had to perform. They were the local official representatives of the Company, in addition to managing gas-works. That was to say, they had to be diplomats, in order to carry on negotiations with the local authorities. Thus they needed a very special type of man—one who was not only a good gas engineer, but who could uphold the dignity of the Company as their ambassador. The measure of their success was shown by the figures submitted that day, which were only vitiated by the unfortunate position of the franc—a matter beyond their control.

Loughborough Gas Supply.—Complaints which have been general of late in regard to the indifferent quality of gas supplied at Loughborough, were accentuated at a recent meeting of the Town Council, when, in relation to a proposal as to a possible reduction in price, Mr. Smith suggested that it was more desirable that calorific value should be considered. He asserted that in certain districts, when all the stoves were in use at the same time, the supply was insufficient. He suggested that it was in the interest of the undertaking that these conditions should be materially improved, for with a better service the consumption would go up by leaps and bounds. He knew that at the present time, consequent upon their dismal experiences as to spoilt dinners, many people were using paraffin stoves in preference to gas. Alderman Clemenson drew attention to a paragraph in the minutes of the Gas Committee which explained that it had been decided to defer the further consideration of the reduction in charges until another communication had been received by the Board of Trade as to maximum therm rates. He observed that they were told some time ago that the maximum thermal price was only for an emergency; and he could not see, therefore, how it could be said that the time had not arrived for a reduction in the charges. Just as workmen's wages had come down, so should the price of gas. Mr. L. James, Chairman of the Gas Committee, pointed out the impossibility of reducing prices until they knew definitely what the Board of Trade were going to do.

WELSBACH LIGHT COMPANY, LTD.

Strong Financial Position.

The Twelfth Annual General Meeting of the Company was held on Thursday last, at Winchester House, Old Broad Street, E.C.—Mr. J. R. YATES (the Chairman) presiding.

The SECRETARY (Mr. E. J. Butcher) read the notice convening the meeting; and the report of the Directors [*ante*, p. 259] and the statement of accounts for the financial year ended March 31 last, were taken as read.

The CHAIRMAN, on rising, said that, before proceeding to the ordinary business of the meeting, he felt it would be in harmony with the views at any rate of the older shareholders—as it certainly was with his own—if he made some reference to the death of a former Chairman of the Company, and a distinguished man, Lord Weardale. So far as their Company was concerned, Lord Weardale's chairmanship covered a difficult period; but he worked hard, and after he ceased to hold office he still maintained his interest in the undertaking. Through the critical years from 1914 onwards, Lord Weardale gave support and encouragement which it would be unbecoming on his (the speaker's) part to forget. Proceeding, he pointed out that the business of the Company might be classed in two categories: Incandescent mantles, which formed their primary interest, and goods other than mantles, which might be termed sundries. Despite foreign and other competition they sold more mantles last year than in the previous year, and considerably more sundries. In both cases they sold at lower prices; but while in the case of mantles their aggregate receipts in pounds sterling were below those of the previous year, in the case of sundries, notwithstanding the lower prices, they were in excess of those of the preceding year. The percentage of sundries to their total trade was advancing, so that the broadening of the business was making progress.

COMPETITION FROM ABROAD.

With regard to competition from abroad, the imports of mantles for the financial year to March 31, 1923, were considerably up as compared with those of the previous year, being £276,976 as against £211,838. In this connection, it was necessary for him to say something about the Safeguarding of Industries Act, and its effect upon the incandescent mantle trade. It would be recalled that compounds of thorium were included in the schedule to Part I. of the Act, which carried an import duty of 33⅓ p.ct. Any benefit arising from this part of the Act was, however, largely neutralized by the construction which was placed upon the decision of the Referee by the Customs Authorities. By this construction, duty was assessed on thorium, not as it existed when it came into this country in the form of a finished mantle, but on the value of the thorium content of the mantle in its raw state. In other words, a duty equivalent to about 5 p.ct. of the whole mantle instead of 33⅓ p.ct. Under Part II. of the Act, which was intended to prevent dumping by reason of the depreciation of the currencies of those countries in which the goods were manufactured as compared with sterling, the application of the mantle manufacturers was still pending at the time of the last meeting. Subsequently, on Sept. 2, 1922, the Statutory Committee under that part of the Act made and published a reasoned report recommending, in effect, the imposition of a duty on mantles imported from Germany, having regard to the depreciation of the mark. In pursuance of this report, an Order imposing the duty—namely, one-third of the whole value of the mantles imported from Germany—was made by the Board of Trade on Oct. 9, 1922, and was subsequently approved by the House of Commons. This Company's trade was a seasonal one, mainly from September to March. During the four or five months preceding the making of the Order, German manufacturers and those English firms who imported German goods had ample opportunity, and took every advantage of it, to fill English warehouses with German mantles, with the result that for the season with which they were now dealing—namely, the winter of 1922-23—such protection as was intended to be given by this part of the Act had been largely ineffective. As a matter of fact, instead of safeguarding the industry for three years, the effect of Part II. of the Act would probably be limited to one season—that of 1923-24. The duty, such as it was, was not borne by the British consumer, but by the German manufacturer, for immediately it was imposed the German manufacturer lowered his price to the extent of the duty charged—thus bearing it out of his own pocket. The British taxpayer got the benefit of the duty which the German manufacturer paid.

"WELSBACH" AND PUBLICITY.

Turning to another matter, he remarked that the Company's advertising campaign had been one of the most extensive of any in their history. The catalogue issued last year surpassed anything previously seen in the lighting trade; and the coming one would be a still further improvement. The effects of such an advertising policy were felt more fully later than at the time of the propaganda itself; but the Directors had charged the whole cost against this year's trading account. They were following up last year's efforts in a way which they felt sure would be equally effective as those of last year. On the previous night, went on the Chairman, being unable to sleep owing to the excessive heat, he looked round for something to read, and appropriately enough his hand fell upon an issue of that well-conducted periodical the "GAS JOURNAL," which had been thoughtfully provided for him by Mr. Harold Talbot (their General Manager). Now, in "THE GAS SALESMAN" Supplement to that number of the "JOURNAL" he found two articles of an entirely different character—one scientific, and the other popular—both interesting, and having this one thing in common: The principles enunciated in each of the articles were illustrated, and markedly illustrated, by references to Welsbach productions. Coming from two widely different sources, he regarded this as a very noteworthy point. The first article, referring to the principles on which a burner should be constructed, was illustrated by diagrams of their "Welsbach-Kern" burner. The second, and more popular, article illustrated what was advanced by reference to the Company's "Economy" burner. The "Economy" burner used quite a little mantle, and was intended for small bedrooms, landings, bathrooms, and other places where slight

illumination and a trifling consumption of gas met the requirements. A large provincial gas company, finding among their stock towards the end of the season about three dozen "Economy" burners wondered why this should have been the case. The article proceeded: "Welsbach burners and mantles being so extensively advertised, and the name of Welsbach being almost a household word throughout the British Isles, any question of insufficient publicity was ruled out, as also was any doubt as to the quality and gas-saving attributes of the burners. Finally it was decided that the saving of gas consumption effected by the 'Economy' burners had not been demonstrated in a sufficiently interesting and convincing manner; and a public exhibition in the windows of the Company was inaugurated. 'Economy' burners were placed side by side with the ordinary flat-flame variety. At a glance, the public were able to judge for themselves of the suitability of the 'Economy' burner for small bedrooms, halls, landings, passages, bathrooms, sculleries, and other restricted places where the economical consumption of gas is a *sine qua non*, and where the flat-flame burner is otherwise very generally used. . . . The remarkable success of this exhibition surprised even the originators." This, he thought, illustrated the advantages of new methods of advertising—in other words, of advertising by action. In the National Gas Exhibition, to take place in Birmingham in September, the Welsbach Company would have a prominent part. The range of their burners had been considerably increased, partly in the development of aluminium burners, but especially in superheated and economy burners—in the construction of which they took the utmost care—and in other ways. Last year's mild winter must be regarded as a very unfavourable one from the point of view of radiator sales. Notwithstanding this, their business in these articles was well maintained, not only as regarded the well-known "Welsbach-Kern" radiator, but also the smaller and very efficient radiator called the "Handiheater," which had had great success. With regard to the manufacture of mantles, it was found by the Committee who sat under Part II. of the Safeguarding of Industries Act that the process of manufacture and use of materials in this country was up to date and efficiently conducted. Of the British factories, none, in his belief, was more efficient in working than their own factory at Wandsworth. He always found the organization there in perfect order. It was largely due to the high quality and effectiveness of the Welsbach mantle that they had been able, notwithstanding the flood of cheap Continental goods, to increase the sale of mantles during the past year, and in the first quarter of this year to increase them still further. Many buyers would only have Welsbach—to quote the slogan, "The original, and still the best."

THE DIVIDEND AND BONUS.

Turning to the accounts, he pointed out that the balance of trading profit, which was slightly up as compared with that of the previous year, was arrived at after the conservative writing-down of stock, and after debiting the whole cost of the year's advertising campaign. With regard to the distribution recommended—namely, 5 p.ct. dividend and 2½ p.ct. bonus—the Board regarded it as a fair and proper one, remembering that they were carrying forward substantially what they brought in (about £18,000). Comparing the present balance-sheet with the first presented by him—namely, in 1912—the Chairman pointed out that the whole of the intangible "assets" then appearing, to the amount of £74,600, together with £5450 from goodwill, had been written off, and the Austrian shares, at that time standing at £179,000, had been favourably disposed of. In place of those dubious assets, they had to-day gilt-edged securities and cash amounting to about £200,000. On the other side of the account, the shares outstanding had been reduced by over 7000, and the debenture debt by no less than £170,000. He did not know of any trading company of these dimensions in the balance-sheet of which such a remarkable improvement had been produced in a similar time. Their present control of large liquid assets placed them in a position of great strength, with the ability to take advantage of any favourable development which might present itself. It also made them, with regard to other companies, a power to be reckoned with.

Major G. O. S. PRINGLE formally seconded the resolution, which, after some discussion, was carried unanimously.

Following this, the retiring Director (Mr. H. W. Walmisley) and the Auditors (Messrs. Deloitte, Plender, Griffiths, & Co.) were re-elected.

Acknowledging a vote of thanks to the Chairman, Directors, and staff for their services during the past year, the CHAIRMAN remarked that the Company were exceedingly well served by their staff.

Ossett Annual Report.

In his annual report for the year ended March 31, Mr. Arnold E. Mottram, Engineer and Manager of the Ossett Corporation Gas Department, states that the gross profit for the year is £10,674. Interest and sinking fund charges amount to £12,418, leaving a deficit on the year's working of £1744, compared with a deficit of £4330 for the previous year. They have effected an improvement on the year's working to the extent of £9786. During the year the price of gas was reduced by 1s. per 1000 c.ft. Practically the whole of the gas sold came from the Crigglestone Coke-Ovens. The quality has been good and the supply satisfactory. They had to supplement the quantity by their own plant for one or two weeks in the depth of winter. The first full year's working of the new system of supply has proved to be in every way a success. The heaviest charge on the balance-sheet is the sinking fund and interest account, which has now reached the maximum. The outside department has had a busy year, special attention being given to consumers' burners and appliances. Consumers generally have been well satisfied with the gas supplied.

An outbreak of fire at the Saltley gas-works occurred a few days ago, caused by the over-boiling of pitch. Little damage was done to the plant; the conflagration being extinguished before it had assumed dangerous proportions.

CHORLEY GAS DEPARTMENT.

Mr. Mark Newsome, Engineer and Manager of the Borough of Chorley Gas Department, in his report for the year ended March 31, 1923, states that the total receipts for the year amounted to £52,830, and the expenditure to £37,503. This left a gross profit of £15,326, contrasted with £8603 for the previous year. This profit represents 8·14 p.ct. on the capital involved at March 31. Against this sum, £8027 has been paid for interest, sinking, and depreciation fund charges, equivalent to 9·59d. per 1000 c.ft. of gas sold. Allowing for a total transfer of £71, accumulated small balances of special reserve accounts and bank interest on net revenue account, the result of the year's trading amounts to a net profit of £7393, as against a loss of £256 on the previous year. The average price of gas realized during the year was 4s. 3·21d. per 1000 c.ft.

Consequent upon the successful financial result of the past year, the following charges will operate from the final meter readings for the June quarter:

	Within Borough.	Outside Borough.
	Per 1000 C.Ft.	
	s. d.	s. d.
Lighting—		
Not exceeding 200,000 c.ft. yearly. . .	3 6	.. 3 9
Exceeding " " " . . .	3 3	.. 3 6
Power—		
Not exceeding 100,000 c.ft. yearly. . .	3 3	.. 3 3
Exceeding 100,000 and not above 300,000 c.ft. yearly	3 0	.. 3 0
Exceeding 300,000 c.ft. yearly	2 9	.. 2 9

The total gas produced during the year was 219,866,000 c.ft., as compared with 213,618,000 c.ft. during the previous year, showing an increase of 6,248,000 c.ft., equal to 2·92 p.ct. The volume of carburetted water gas made during the year amounted to 20,823,000 c.ft., equal to 9·47 p.ct. of total gas made.

The total consumption for the year amounted to 200,848,100 c.ft., as compared with 197,433,500 c.ft. for the previous year—an increase of 3,414,600 c.ft., equal to 1·73 p.ct. The unaccounted-for gas amounted to 19,018,000 c.ft., being equal to 8·65 p.ct. of the total made, as compared with 15,688,500 c.ft., or 7·34 p.ct., last year—an increase of 3,329,500 c.ft., or 1·31 p.ct.

The total quantity of coal used was 11,673 tons. The average yield of gas per ton of coal carbonized was 17,050 c.ft., as compared with 16,794 c.ft. last year, being an increase of 256 c.ft. per ton used. The carburetted water-gas plant produced 20,823,000 c.ft., as against 10,177,000 c.ft. for the previous year. Residuals have yielded a more profitable return, the net result being greater by £402. Coke yielded £5296, as against £6907 last year. There has been a satisfactory increased return from tar, particularly during the second period of the financial year; the revenue being £3187, as against £1721. Values yielded from sulphate of ammonia have been greatly increased—£760, as against £214.

Salaries Question at Middlesbrough.

During a discussion at last week's meeting of the Middlesbrough Town Council, Alderman Sir Joseph Calvert (the Chairman of the Gas and Electricity Committee) made a stout fight against salary reductions in regard to chief officials. He said that the total deductions recommended by the General Purposes Committee amounted to £454, of which a sum of £172 was in respect of the Managers of the gas and electricity departments. This, however, did not come out of the rates at all, because the salaries were paid out of trading costs. There was therefore a net saving of £282, which was equal to an eighth of a penny rate. For this they were disturbing the minds of the chief officials—the men who had the work in hand whereby economy could be effected. They were disturbing the general serviceability of their officials, and making every man doubtful as to what was his position. It was not by depreciation that anything was accomplished, but by appreciation. A little time ago when the question of making ends meet in regard to the rate for the new year was being considered, he suggested that £10,000 should be handed over from the profits of the gas and electricity undertakings in order to keep the rate down to 20s. in the pound. From the two departments this sum was granted. It was equal to a 4½d. rate, which was more than the whole cost of the official management of the borough. The gas and electricity undertakings had paid the whole lot of the salaries; and yet, in the absence of the Chairman of the Committee in another place on the town's business, the two Managers were called upon to suffer reductions in salaries. A motion by Alderman Calvert that the minutes recommending reductions should not be confirmed was defeated, whereupon he sought to give the various committees consideration of the question relating to their respective officials; but this was rejected, and the Committee's reduction recommendations were eventually adopted.

Price of Gas at Hereford.—Mention was made on p. 267 of last week's issue of the "JOURNAL," of the gratifying fact that 6d. per 1000 c.ft. has been taken off the price of gas at Hereford. It was said then that the price had been reduced from 4s. 6d. to 4s. per 1000 c.ft. Both these figures are, however, subject to 3d. discount, so that the actual reduction is from 4s. 3d. net to 3s. 9d. per 1000 c.ft.

Cheaper Gas for Dunfermline.—Dunfermline Town Council have decided to reduce the price of gas to ordinary consumers by 2d. per 1000 c.ft. This, it was stated, on last year's consumption would mean a reduction in revenue of £2500; but there was a balance from last year of £3500. The Council also decided to extend their gas-main to Kincardine-on-Forth, so as to be able to supply gas in bulk to the Kincardine Gas Company. It is hoped that the pipes will be laid and the supply turned on by October. In accordance with the decision of the Regional Council, a reduction of wages of the employees of the gas-works by 2s. 3d. per week was also agreed to.

THE NORTH-EAST COAST COAL TRADE.

From Our Own Correspondent.

Under the influence of various adverse factors, the market tone has been weak during the past week. Much of the trouble was no doubt due to the strike of dockers at various ports. This caused considerable delay in the arrival of boats; and some of the collieries, who would otherwise have been in quite a comfortable position, were threatened with a shortage of tonnage. In order to keep the pits working, they were bound to come on the market with a certain amount of coal, and to sell at reduced figures. The demand for prompt was, however, far from brisk.

For forward contracts, collieries still hold the view that prices will improve again, and will not reduce to any great extent on recent quotations. But, with the uncertain international outlook, and the shaky condition of the French, German, and Italian exchanges, speculative merchants at home and buyers on the Continent are not inclined to commit themselves far ahead. Consequently business is hard to fix up; collieries being sufficiently well booked in most cases up to the end of the year to be able to hold out for their prices. There is certainly enough inquiry circulating at present to justify them in this course; and most of the better-class collieries cannot have any great quantities of free coal for disposal.

The quotation for best qualities of gas varies between 28s. 6d. and 30s., with collieries firm generally forward, though sometimes willing to arrange special terms for prompt shipment or early terms. Seconds are about 27s., and coking 26s. to 28s. 6d., according to quality.

COAL TRADE IN THE MIDLANDS.

From Our Local Correspondent.

The falling off in demand is making some collieries very solicitous for orders, and there is shading of prices; but there is no general re-alignment. High-grade household coals are offered on easier terms. As regards industrial fuels, such movements as have taken place do not suggest any break in the market. With quotations depending on the more variable experiences of collieries, transactions in slacks, and to some extent in gas coke, have been marked by an easier tendency. On the other hand, some producers whose individual position is strong stiffen their quotations here and there.

More has been heard in this district about the depreciation of furnace cokes than the facts seem to warrant. There is indisputably a good deal of disparity in the quotations. What many of the coke-ovens are doing is to allot a certain proportion of their output to keep alive connections at home, and dispose of the rest abroad at the best price they can get. It is stated that the full extent of the export demand has not been tested. After the abstention of buyers a month or so ago, business has become more animated again; and though the home requirements have declined, there is no sign of an excess of supplies.

YORKSHIRE AND LANCASHIRE COAL TRADE.

From a Local Correspondent.

At this time of the year gas companies buy ahead; and there are rather large inquiries in the markets in Yorkshire and Lancashire. Prices quoted vary for screened gas coals from 19s. 6d. to 21s. per ton at the pit.

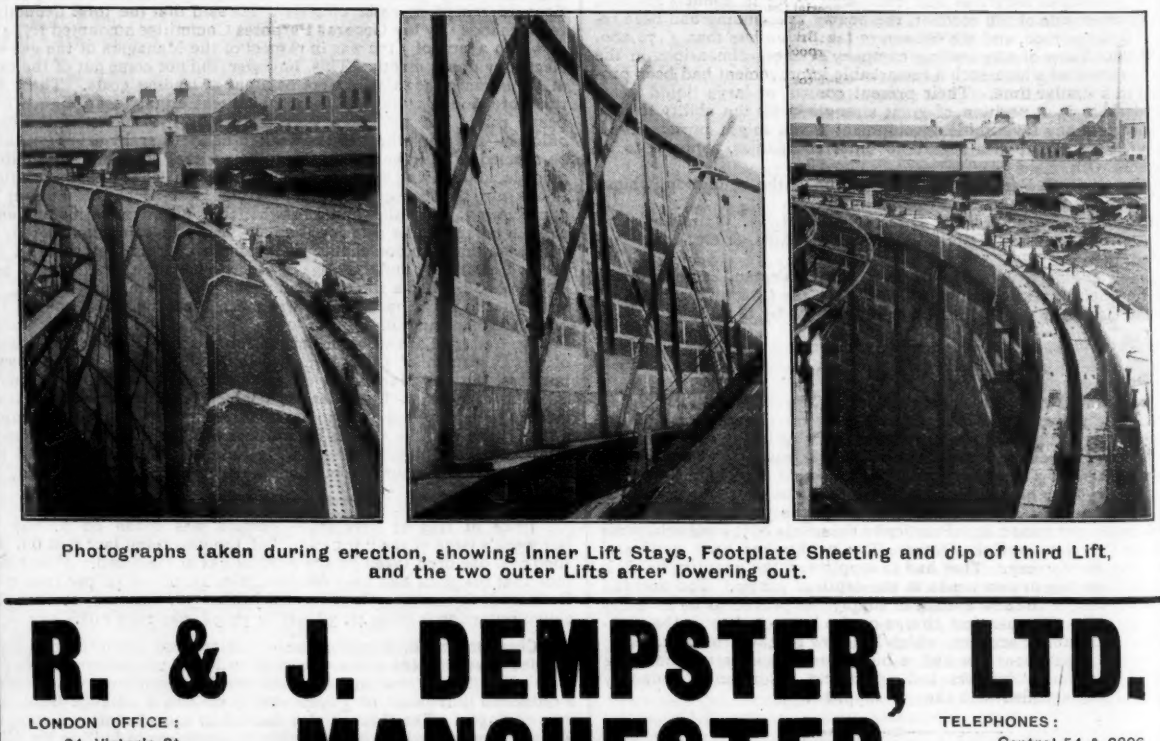
There is no improvement in the request for house coals through inland directions; and in view of the fact that the foreign demand has recently fallen off—though it is now recovering slightly—several collieries report shorter working hours. The recent advance in miners' wages is not, apparently, what was anticipated in trading circles; the result being that industrial consumers are now more in line with the ideas of the producers with respect to forward business. Large industries are of opinion that there is not much business ahead; and they are buying from month to month.

In the shipping section Germany is gradually coming back into the market; but the rates of exchange appear at the moment to be presenting difficulties to the French and the Belgians.

Devonport Gas Undertaking.—At a meeting of the Plymouth Town Council, Alderman J. J. H. Moses congratulated the Gas Committee (who supply the Devonport area) on their profits for the year, which had enabled them to place £15,000 to working capital and £7353 to reserve fund. One would have been much more pleased, he said, if it had been possible for the Committee to make some recommendation that would have brought a more direct benefit to the consumers; but they were evidently acting with wisdom in setting aside a sum which placed the undertaking in a better position than ever before.

Accounts of the Dundee Gas Commissioners.—In the accounts for the year ended May 15 last, it is stated that, while no depreciation has been allowed during the year in respect of meters, stoves, and fires, no amounts have been charged to capital; the whole cost of new meters, stoves, and fires being charged against the revenue of the year. In the estimates for the year 1923-24, provision is being made for £5000 to meet depreciation on meters, &c. The estimates for 1922-23, it is stated, did not work out as anticipated; and in consequence the debit revenue balance has only been reduced from £70,606 to £46,189. It has not been possible to make any transfer to reserve fund. Temporary loans amount to £104,783. The total receipts for the year amounted to £357,636, of which the income from gas was £260,962. The total expenditure was £274,957, leaving a balance to net revenue account of £82,678.

SEVEN-MILLION SPIRALLY-GUIDED GASHOLDER



Photographs taken during erection, showing Inner Lift Stays, Footplate Sheeting and dip of third Lift, and the two outer Lifts after lowering out.

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MANCHESTER

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STOCK MARKET REPORT.

BUSINESS on the Stock Exchange last week was only at moderate pressure, partly owing to the immediate rise of the thermometer—and it was just as irregular. The week opened with a jumpy tone affecting most markets, finally leaving them lower. Tuesday was a turn for the better, but a cautious one. Government issues picked up a bit, but hardly anything else. Wednesday made a bigger effort; but it was over-done, and fell back to more stable proportions. And so things continued. Home Rails made a good rally, and Canadians steadied; but Argentines drooped. The Foreign Market moved irregularly.

Business in the Gas Market was only moderate; and most of that was in a few familiar lines. The general tone was fair, though here and there where a point or two of advance had been scored it was given up again. A good many figures were quoted *ex div.*, and most of them came out the better for the operation.

The following transactions in gas during the week were recorded: On Monday, Bombay £5 5s. 6d., Commercial 4 p.c. 97½, European 8½, Gas Light ordinary 98½, 98¾, 98⅞, 99, 99½, 99⅛, ditto 4 p.ct. preference 81½, ditto 3 p.ct. debenture 60½, Hastings and St. Leonards 3½ p.ct. 75, Imperial Continental 155, 157½, 159½, 159⅝, ditto 3½ p.ct. debenture 77, Primitiva 5 p.ct. preference 34s., South Metropolitan 98½, 98⅜, 98½, 99, South Suburban 102, 104, 104½, 105, ditto 5 p.ct. debenture 97, 97½, Southend 5 p.ct. new 89½, Colombo 7 p.ct. preference 9⅛. On Tuesday, Cape Town 7½, Gas Light ordinary 98⅛, 98⅜, 99, 99½, ditto 4 p.ct. preference 82½, ditto 3 p.ct. debenture 60½, Imperial Continental 155, 156, 158, ditto 3½ p.ct. debenture 76½, Liverpool 7 p.ct. preference 108, Primitiva 6s. 6d., ditto 5 p.ct. preference 35s., South Metropolitan 97, 98, 98½, South Suburban 103, Harrow and Stanmore 5 p.ct. 102½, Southend 5 p.ct. new 90, Danish 5⅝, 6, ditto 5 p.ct. preference 6⅜, 6½. On Wednesday, British 12⅞. European 7⅜, 8½, Gas Light ordinary 98½, 99½, 99½, ditto 4 p.ct. preference 81⅛, 82, ditto 3 p.ct. debenture 62, Hastings and St. Leonards 3½ p.ct. 76, 76½, Imperial Continental 153, 154½, 155, 156, 157½, 158, Primitiva 7s. 10½d., ditto 5 p.ct. preference 35s. 6d., 36s., 1911 debenture 57½, South Metropolitan 98½. On Thursday, Aldershot 4 p.ct. preference 74, Croydon sliding-scale 103, ditto maximum dividend 82, Gas Light ordinary 99½, ditto 3½ p.ct. maximum 67, ditto 4 p.ct. preference 82, Imperial Continental 157, 157½, 159, 160, South Metropolitan 98½, 99, ditto 3 p.ct. debenture 61. On Friday, Aldershot 4 p.ct. preference 74, Brentford 4 p.ct. debenture 78½, 79, Cape Town 6½, Continental Union 37, Gas Light ordinary 98½, 99½, 99½, ditto 3½ p.ct. maximum 67½, ditto 4 p.ct. preference 80½, Imperial Continental 161, South Metropolitan 99, South Suburban 5 p.ct. debenture 97½, Worthing Consolidated 80.

In the Money Market, there was quite a cessation of the excitement caused by the unexpected advance in the previous week of the Bank rate, and a general disposition to let things settle themselves peacefully; and so it turned out. At no time was there any awkward pressure; in proportion as requirements arose, the necessary supplies were forthcoming, and the close of the week was quite comfortable. Discount was as easy. Silver was easier, on big China sales. The Bank of England rate is 4 p.ct., as fixed on July 5.

ANTE-WAR PRICES AND DIVIDENDS, LATEST DIVIDENDS, AND LAST WEEK'S TRANSACTIONS.

Issue.	Share.	When ex-Dividend.	Ante-War Dividend & Bonus.	Last Dividend.	NAME.	Closing Prices, July 30, 1914.	Present Prices.	Lowest and Highest Prices of Transactions.
£			p.c.					
131,978	Stk.	Feb. 22	—	5%	Aldershot 5 p.c. max. C.	..	74—79	...
190,492	,,	,,	4	4%	Do. 4 p.c. Pref.	..	72—77	74
1,551,868	,,	Apl. 5	2½	5%	Alliance & Dublin Ord.	59—64	72—77	...
374,000	,,	Jan. 11	4	4%	Do. 4 p.c. Deb.	76—79	63—68	...
280,000	5	May 17	7½	4/—	Bombay, Ltd.	5⅞—6⅛	5—5½	£5 5s. 6d.
100,000	5	Feb. 22	16	8/—	Bourne-mouth Gas and Water { 5 p.c.	..	12—13	...
383,110	10	,,	7	7/—	Bourne-mouth Gas and Water { B 7 p.c.	15—15½	12—13	...
115,000	10	,,	6	6/—	Bourne-mouth Gas and Water { Pref. 6 p.c.	13½—14	10½—11½	...
162,063	—	June 28	—	4%	Bourne-mouth Gas and Water { 4 p.c. Deb.	..	77—82	...
992,045	Stk.	July 12	14	61/—	Brentford A Consolid.	261—266	100—105*	...
734,920	,,	,,	11	61/3	Do. B New	204—209	100—101*	...
55,000	,,	,,	5	5%	Do. 5 p.c. Pref.	109—111	83—88*	..
221,400	,,	June 14	4	4%	Do. 4 p.c. Deb.	91—93	77—82	78½—79
214,775	,,	Mar. 8	11	11%	Brighton & Hove Orig.	208—213	175—180	...
244,200	,,	,,	8	8½%	Do. A Ord. Stk.	154—159	130—135	...
1,273,500	Stk.	Feb. 22	5	5%	Bristol 5 p.c. max.	..	97—98	...
370,000	20	Mar. 22	12½	10/—	British A Ord.	44—45	12½—13½	12⅝
10,000	10	June 28	—	7/—	Do. 7 p.c. Pref.	..	11½—12½	...
120,000	Stk.	,,	4	4%	Do. 4 p.c. Deb. Stk.	88—90	74—79	...
220,335	,,	,,	4	4%	Buenos Aires 4 p.c. Deb.	85—87	56—59	...
100,000	10	May 17	—	—	Cape Town & Dis., Ltd.	1⅛—2⅛	6½—7½	6½—7¼
100,000	10	May 3	—	4/6	Do. 4½ p.c. Pref.	4—6	6—7	...
100,000	Stk.	June 28	4½	4½%	Do. 4½ p.c. Deb. Stk.	70—75	70—75	...
237,860	,,	,,	—	7½%	Cardiff 7½ p.c. Deb.	..	106—111	...
157,150	,,	Feb. 26	5	5%	Chester 5 p.c. Ord.	108—110	..	...
1,513,280	,,	Mar. 8	5/9/4	60/—	Commercial 4 p.c. Stk.	106—108	96—99	97½
360,000	,,	,,	5½	60/—	Do. 3½ p.c. do.	103—105	95—99	...
475,000	,,	June 14	3	3%	Do. 3 p.c. Deb. Stk.	69½—71½	56—61	...
800,000	,,	Dec. 15	4	—	Continental Union, Ltd.	76—79	37—41	37
200,000	,,	Dec. 14	7	4%	Do. 7 p.c. Pref.	115—118	72—77	...
660,000		Mar. 8	—	6%	Croydon sliding scale.	..	103—106	103
284,975		,,	—	5%	Do. max. div.	..	83—86	82
492,270	Stk.	—	6	4½%	Derby Con. Stk.	123—125	..	...
55,000	,,	—	4	4%	Do. Deb. Stk.	102—104	..	...
209,000	,,	Apl. 5	—	5%	East Hull 5 p.c. max.	..	..	...
1,002,180	10	July 12	10	5/0	European, Ltd.	17⅛—18	7½—8½*	7⅞—8½
16,546,120	Stk.	Feb. 8	4/17/4	52/—	Gas Light and Coke { 4 p.c. Ord	98—102	98—100	98½—99½
2,600,000	,,	,,	3½	35/—	Gas Light and Coke { 3½ p.c. max.	76—79	67—69	67—67½
4,062,235	,,	,,	4	4%	Gas Light and Coke { 4 p.c. Con. Pref.	96—99	80—82	80½—82½
4,761,930	,,	June 14	3	3%	Gas Light and Coke { 3 p.c. Con. Deb.	72½—74½	60—63	60½—62
130,000	,,	Dec. 11	10	10%	Gas Light and Coke { 10 p.c. Bonds	..	..	...
		—	—	—	Gas Light and Coke { 7½ p.c. Ilford Deb.	..	..	...
82,500	,,	Mar. 8	5	65/7½	Hastings & St. L. 5 p.c.	..	92—97	...
258,740	,,	,,	3½	50/7½	Do. 3½ p.c.	87—89	75—78	75—76½
70,000	10	May 17	11	10%	Hongkong & China, Ltd.	16½—16¾	15—16	...
86,600	Stk.	Mar. 8	9	9½%	Hornsey 7 p.c.	..	147—152	...
1,976,000	,,	May 31	9	£17	Imperial Continental	150—160	157—162	153—161
404,800	,,	Feb. 8	3½	3½%	Do. 3½ p.c. Deb. Red	84—86	76—78	76½—77
235,242	,,	Mar. 8	6½	6½%	Lea Bridge Ord. 5 p.c.	119—121	97—102	...
2,498,905	,,	Feb. 26	10	37/6	Liverpool 5 p.c. Ord.	—	..	...
600,000	,,	Mar. 22	—	7%	,, 7 p.c. Pref.	..	107—110	108
165,736	,,	Feb. 22	7/5/6	80/—	Maidstone 5 p.c.	..	107—112	...
63,480	,,	June 28	—	3%	Do. 3 p.c. Deb	..	52—57	...
75,000	5	June 14	6	3/6	Malta & Mediterranean	4⅛—4½	3½—4	...
100,000	100	Apl. 5	4½	4½%	Met. of Melbourne { 4½ p.c. Deb.	99—101	97—100	...
541,920	Stk.	May 17	4	4%	Monte Video, Ltd.	11½—12	55—60	...
1,875,892	,,	Feb. 22	4½	5%	Newcastle & Gatsh'dCon.	98½—99½	86½—87½	...
350,166	,,	,,	—	4%	Do. 4 p.c. Pref. Stk.	..	76—78	...
329,705	,,	June 28	3½	3½%	Do. 3½ p.c. Deb.	82—83	70—72	...
15,000	10	Aug. 26	—	7/6	North Middlesex 10 p.c.	..	..	...
55,940	10	Mar. 8	7/14/0	7/8⅞	,, ,, 7 p.c.	14—15	12—13	...
800,000	Stk.	May 3	8	8%	Oriental, Ltd.	117—122	97—102	...
188,120	Stk.	June 28	—	78/9	Plym'th & Stonh'se 5 p.c.	..	106—110	...
60,000	50	Mar. 8	13	65/—	Portsea Island, B	128—131	103—108	...
100,000	50	,,	12	60/—	Do. C	118—121	100—105	...
290,069	5	—	8	—	Primitiva Ord.	5½—6	⅛—⅜	6/6—7/10½
499,960	5	—	5	—	Do. 5 p.c. Pref.	4½—5	1½—2	34/—36/—
521,600	100	June 1	4	4%	Do. 4 p.c. Deb.	91—93	73—75	..
600,000	Stk.	Jan. 25	4	4%	Do. ,, ,, 1911	..	56—59	57½
346,198	,,	June 28	4	4%	River Plate 4 p.c. Deb.	85—87	56—59	...
150,000	10	Mar. 22	6	6/—	San Paulo { 6 p.c. Pref.	10¼—11	5⅛—6⅛	...
125,000	50	July 2	5	5%	San Paulo { 5 p.c. Deb.	47—49	37—40	...
135,000	Stk.	Mar. 22	10	5%	Sheffield A	223—224	104—106	...
209,984	,,	,,	10	5%	Do. B	222—224	104—106	...
585,500	,,	,,	10	5%	Do. C	220—222	104—106	...
133,201	Stk.	Sept. 15	4	4%	Shrewsbury 5 p.c.	..	..	...
90,000	10	May 31	9	9/—	South African	10¼—11⅛	8—10	...
6,609,895	Stk.	Feb. 22	5/4/0	60/—	South Met. Ord.	111—113	97½—99½	97—99
250,000	,,	Ju'y 12	—	5%	Do. Red. Pref.	..	97—98*	...
1,895,445	,,	,,	3	3%	Do. 3 p.c. Deb.	73½—74½	61—63*	61
734,000	,,	Mar. 8	—	6½%	Do. 6½ p.c. Deb.	..	106—108	...
91,500	,,	Feb. 22	8½	8½%	South Shields Con. Stk.	157—159	129—131	...
1,087,795	,,	,,	6	6%	S'th Suburb'n Ord. 5 p.c.	114—116	102—105	102—105
368,837	,,	June 28	5	5%	Do. 5 p.c. Deb. Stk.	116—118	93—98	97½
647,740	,,	May 3	5	7%	S'th'mpt'n Ord. 5p c. max.	99—102	88—91	...
121,275	,,	June 28	4	4%	Do. 4 p.c. Deb. Stk.	..	72—77	...
250,000	,,	Mar. 8	—	70/—	Swansea 7 p.c. Pref. Stk.	..	103—105	...
200,000	,,	June 28	—	6½%	Do. 6½ p.c. Deb. Stk.	..	105—107	...
120,000	,,	Feb. 22	—	8%	Tottenham and District { A 5 p.c.	135—138	123—128	...
782,275	,,	,,	6	6½%	Tottenham and District { B 3½ p.c.	115—117	102—107	...
181,255	,,	June 14	4	4%	Tottenham and District { 4 p.c. Deb.	87—89	78—82	...
258,251	Stk.	Mar. 22	5	5%	Tynemouth 5 p.c. max.	108½—109	90—92	...
					Wandsworth, Wimbledon, and Epsom—			
30,000	,,	July 12	8½	90/—	Wandsworth A 5 p.c.	131—136	126—131*	...
255,636	,,	,,	6½	75/—	Do. B 3½ p.c.	129—134	112—117*	...
108,075	,,	,,	—	63/—	Do. C	..	97—102*	...
140,865	,,	,,	—	63/—	New Ordinary	..	97—102*	...
352,000	,,	,,	6½	71/3	Wimbledon 5 p.c.	117—122	109—114*	...
98,000	,,	,,	6½	76/3	Epsom 5 p.c.	121—126	112—117*	...
88,416	,,	June 28	5	5%	3 p.c Deb. Stk.	66—69	57—60	...

* Ex. div.

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CURRENT SALES OF GAS PRODUCTS.

The London Market for Tar, Tar Products, and Sulphate.

London, *July* 16.

Pitch is in steady demand for shipment in the autumn, and the minimum price is 150s. net per ton f.o.b. makers' works. There is very little creosote available for sale, and 10d. to 10½d. net in bulk is obtainable. Solvent naphtha is in improved demand; while benzole and toluole remain steady. Inquiries for road tar materials continue to roll in, and vast deliveries have been, and are being, made for this trade.

Tar Products in the Provinces.

July 16.

The average values for gas-works products during last week were: Gas-works coal tar, 85s. to 90s. Pitch, East Coast, 140s. to 145s. f.o.b. West Coast—Manchester, 137s. 6d. to 142s. 6d.; Liverpool, 138s. 6d. to 143s. 6d.; Clyde, 138s. 6d. to 143s. 6d. Benzole 90 p.ct., North, 1s. 5½d. to 1s. 6½d.; crude 65 p.ct. at 120° C., 11½d. to 1s. naked at makers' works; 50-90 p.ct., naked, North, 1s. 7d. to 1s. 7½d. Toluole, naked, North, 1s. 7d. to 1s. 8d. nominal. Coal tar crude naphtha in bulk, North, 8d. to 8½d. Solvent naphtha, naked, North, 1s. 3½d. to 1s. 5d. Heavy naphtha, North, 1s. 5½d. to 1s. 7½d. Creosote, in bulk, North, liquid, 8d. to 8½d.; salty, 7½d. to 8d.; Scotland, 6¾d. to 7½d. Heavy oils, in bulk, North, 8½d. to 9d. Carbolic acid, 60 p.ct., 3s. 4d. to 3s. 5d. prompt. Naphthalene, £15 to £16; salts, £6 to £8, bags included. Anthracene, "A" quality, 4d. per minimum 40 p.ct., purely nominal; "B" unsaleable.

The employees of the Chiswick Meter Works held their first annual outing last Saturday week. The party spent a pleasant day on the River Thames, journeying by steamer from Windsor to Bourne End. Luncheon and tea were served on board. Accompanying the party were Mr. James Dougall, Proprietor of the Chiswick Meter Works, Mr. R. V. Steed, Sales Manager, and Mr. J. Pitman, Works Manager.

TRADE NOTES.

Welsbach Light Company, Limited.

A new net price list of their upright and inverted British made mantles has been issued by this firm, of Welsbach House, King's Cross, London, W.C. Attention is drawn to the fact that prices have been considerably reduced in order to compete with various foreign imports, and also with the hope of increasing employment at the factory.

Horstmann Gear Company, Ltd.

In the reference on p. 266 of last week's "Journal" to the annual report of the Coventry gas undertaking, it was stated that "there was a reduction of £1221 for public lighting expenses, due to the saving effected by installing clockwork controllers. This reduction had been handed to the ratepayers by decreasing the charges for street-lamps." It may be added that Coventry has 1688 lamps, and of these 1550 have "Horstmann" controllers, supplied by the Horstmann Gear Company, Ltd., of Newbridge Works, Bath.

Year's Working at Accrington.—At a meeting of the Accrington District Gas Board on July 12, satisfaction was expressed at the results of the year's working. Expenses last year were £92,605, so that, with an income of £140,841, there was a gross profit of £48,235. Income showed an increase of £1509, and expenditure a decrease of £51,725. The net income from gas was £111,666. Of this amount, £50,100 was collected from prepayment meters, representing approximately 112 tons 16 cwts. of copper. The income from residuals was £28,925, equal to 66 p.ct. of the net cost of the coal used. The coal carbonized totalled 33,485 tons. The gas produced was 522,113,000 c.ft. There was a decrease of 5,120,000 c.ft. in production, but a saving of 6,560,000 c.ft. on the gas unaccounted-for.

Damage amounting to about £100 was done by fire recently at the premises of Messrs. Alder & Mackay, gas-meter manufacturers and brass founders, of Edderthorpe Street, Bradford. Some injury was done to gas-meters in stock, and to other property. The fabric of the building was, however, little affected.

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